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THE TECHNOLOGY REVIEW

RELATING TO THE MASSACHVSETTS INSTITVTE OF TECHNOLOGY

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THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Boston, Mass.

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY aims to give thorough instruction in *Civil, Mechanical, Chemical, Mining, Electrical,* and *Sanitary Engineering; in Chemistry, Electrochemistry, Architecture, Physics, Biology* and *Public Health, Geology,* and *Naval Architecture.*

To be admitted to the Institute, the applicant must have attained the age of seventeen years and must pass examinations in algebra, plane and solid geometry, physics, history of the United States (or ancient history), English, French and German. Preparation in some one of a series of elective subjects is also required. A division of these examinations between different examination periods is allowed. In general, a faithful student who has passed creditably through a good high school, having two years' study of French and German, should be able to pass the Institute examinations.

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Instruction is given by means of lectures and recitations, in connection with appropriate work in the laboratory, drawing-room or field. To this end extensive laboratories of chemistry, physics, biology, mining, mechanical engineering, applied mechanics, and the mechanic arts, have been thoroughly equipped, and unusual opportunities for field-work and for the examination of existing structures and industries have been secured. So far as is practicable, instruction is given personally to small sections rather than by lectures to large bodies of students.

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The tuition fee not including breakage in the laboratories, is $250 a year. In addition, $30 to $35 per year is required for books and drawing materials.

For catalogues and information, address

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☞ Luncheon—Thursdays at 12.30 p. m. at Grand Pacific Hotel, Clark and Jackson Streets.

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☞ Luncheon—Tuesdays from 12.30—2.00 p. m. in Main Dining Room, at the Bismarck, Mercantile Library Building, Walnut Street.

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☞ Luncheon—Tuesdays at Jules Café.

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Buffalo—Technology Club of Buffalo, at the Buffalo Chamber of Commerce, on the first Thursday of every month at 12.30 p. m.

Chicago—Northwestern Association of M. I. T. at Grand Pacific Hotel, Thursdays at 12.30 p. m.

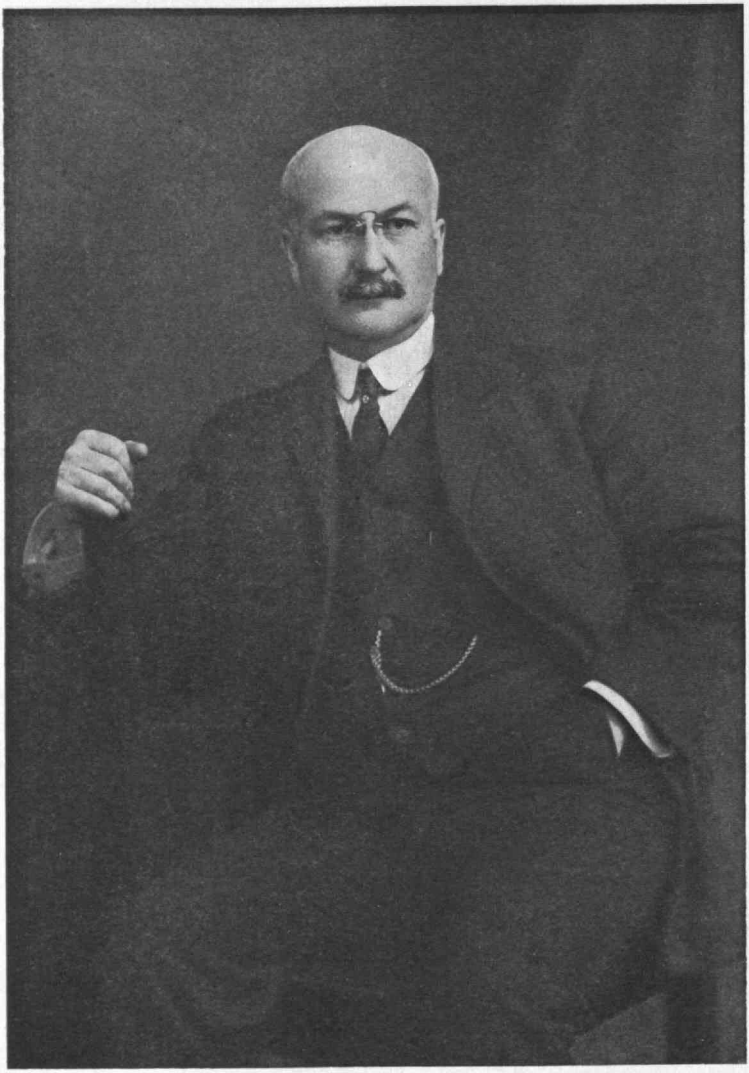
Cincinnati—Cincinnati M. I. T. Club in the Main Dining Room, at the Bismarck, Mercantile Library Bldg., Walnut Street, Tuesdays from 12.30 to 2.00 p. m.

Denver—Rocky Mountain Technology Club, at Daniels' and Fisher's restaurant, bi-weekly.

Los Angeles—Technology Club of Southern California, at the University, on the first Wednesday of each month.

San Francisco—Technology Association of Northern California, at Jules Café, Tuesdays.

Seattle—Technology Club of Puget Sound, at the Arctic Club, corner Third Avenue and Jefferson Street, third Monday of each month, at 12.15.



BURSAR FRANK H. RAND

The Technology Review

VOL. XVI JANUARY, 1914 NO. 1.

DEATH OF BURSAR RAND

He suddenly passes away almost without warning at Pinehurst, N. C.—Students and alumni lose a friend and comrade, and the Institute an efficient officer

Since the last issue of the REVIEW went to press the Institute has suffered an irreparable loss in the death of Frank H. Rand, its assistant treasurer and bursar.

He had worked without rest all summer although the premonitions of heart trouble had warned him that he needed rest. His physicians ordered him away but he remained at his desk putting his affairs in order, until, after serious attacks early in December, he left hurriedly for Pinehurst, N. C. Mrs. Rand followed him immediately and her letters indicated improvement, when word came on December 19, that he had suddenly passed away.

Mrs. Rand arrived in New York with the body on Saturday the 20th, where she was met by Registrar Humphreys, and the body was escorted to the Grand Central Station by a delegation from the Technology Club of New York. In Boston the party was met by President Maclaurin and members of the Faculty.

A prayer service was held at the house in Brookline, on the following Monday morning, conducted by Rev. Harris G. Hale of Leyden Congregational Church, Brookline, interment at the Lowell Cemetery, Rev. Arthur Lincoln of the Kirk Street Congregational Church, Lowell, officiating. During the services at the cemetery, every activity at the Institute ceased.

This is the brief story of the passing of a man whose devotion to the Institute of Technology, its students and Faculty, was measured by the love of all those who came under his influence.

Nominally he was the bursar, but his life for the institution he

loved was worked into and through the whole fabric of its varied interests. In his official capacity he became the executive officer under the President and the treasurer, the business manager in fact, organizing his own department, as well as the general operating force of the plant, with rare skill and effectiveness, making the most of the money at his command in effecting such betterments as were possible, caring for the property of the Institute with excellent judgment, running the Union lunch room, the laundry and the many other interests in his charge with success and economy. He was eminently practical and efficient in everything he undertook.

But it was with the students that he delighted to mingle and every one called him a friend. He was always ready to do all in his power for the boys who needed help—and there were many such—and his power to help went a long way. This desire to be of service was one of Frank Rand's strongest characteristics, whether it was advice, legal or financial, or whether it was direct assistance or position that was wanted. His arm was long and his sympathy unlimited. Some years ago he started a "poor students' fund" which was augmented constantly through his efforts and which he administered in the very best way.

To him came the various student organizations for aid when sound business direction was wanted or when they needed outside influence to accomplish some desirable end. Nearly every class, since he came to the Institute, adopted him as an honored member and he was the central figure at their anniversaries and merry-makings. He was one of the honorary members of Osiris, the senior honorary society, and the 1908 *Technique* was dedicated to him, a rare honor.

To the younger alumni he was well known and he had a wide and valued acquaintance among the older men. He was an adopted member of the class of '85, men of his own age, and some of these more recent acquaintances are among his sincerest mourners.

Mr. Rand became a special student at the Institute last year, solely for the purpose of becoming a regularly accredited member of the Alumni Association, and thus realize a desire that had been long in his mind. He was a regularly appointed special lecturer at the Institute, his first lecture, on business methods, having been given before the students of the Mechanical Engineering Department last year.

When it was whispered that Mr. Rand was dead, the Faculty,

with whom his relations were particularly intimate, were stunned! He meant much to them personally, and as an officer of the Institute he seemed indispensable. His ways were helpful, tactful ways; he accomplished results without display and with no useless motions. There was no unnecessary "red-tape" in the conduct of his office; it was a convenience, a bureau of coöperation.

And there is so much more to be said, but who can say it and who can know all of it? His two hands were strangers in good works and many men who read this and have felt his kindly influence and help will thank God they knew Frank Rand.

Among his more intimate friends there is an overwhelming sense of loss beyond and above the activities that radiated from his desk at the window. His fund of good cheer, his appreciation or his sympathy was spontaneous; it came from the sunshine and the sincerity of his soul.

He builded far better than he knew!

The sketch of his life taken from the 1907 *Technique* is an illuminating lesson in itself. His early struggles and later experience all tended to fit him for the place he made for himself at the Institute.

Frank H. Rand began his life at Irasburg, Vt., August 3, 1861. Two years later his parents moved to Newport, Vt., where he passed his boyhood on the beautiful shores of Lake Memphremagog. Here at the age of fourteen we find him a candy boy on one of the lake steamers. The family moved to Springfield, Mass., then to Troy, Vt., where his father was connected with the United States customs service. The boy entered a railroad office, applying himself to the study of telegraphy, which had interested him; and when he was sixteen he had so qualified himself that he was made chief operator at the Wells River station, where he handled all the train orders of the three railroads having a junction at that point. He afterwards became train dispatcher in the superintendent's office of the South Eastern Railroad; but after he had occupied this position for about a year, his father persuaded him to enter Eastman's Business College in Poughkeepsie, at that time the only institution giving a business course in the country. After completing a short course at the business college he returned to Vermont, and became a clerk in a general store. His employer was fortunately a man of unusual traits; he was a prominent man in the community, and his influence upon the young man was of

great importance in after life. The practical experience in a store of this kind gave him early a training in the fundamentals of business that he always appreciated.

A little later we find young Rand reading law in the law office of the state's attorney, and later on, studying at the law school at Albany, N. Y. He was graduated from the Albany Law School and admitted to the bar in New York and Vermont; but almost at the outset of his legal career he was offered a very desirable position with the J. C. Ayer Company of Lowell, Mass., which he accepted, and for three years he traveled through the Southern States in the interests of that company. His experience in the South during the reconstruction period after the Civil War formed the subject of many an interesting reminiscence afterwards and engendered an interest in the great struggle which led him to study the history of the war in detail. He was later called to the home office in Lowell, where for six years he had charge of the shipping and the out-door advertising, and in these positions he showed the same competence that had been in evidence in everything he had previously undertaken.

Mr. Rand married Miss Mary Augusta Batchelder, January 22, 1887, and soon afterwards went to New Jersey as superintendent of a large manufacturing plant, in which his uncle was principally interested. Soon after that, however, he was offered a more desirable position in the old Third Bank of Boston, which he accepted, and took charge of the discounts, etc., for a period of twelve years. Upon the consolidation of the Third Bank with another, he became connected with a bond house in Rhode Island; and after a year here, through his relations with Mr. George Wigglesworth, at that time treasurer of the Institute, he became bursar of Technology in 1902.

There is no man who attended the Institute since that time who does not have pleasant memories of Mr. Rand. He not only reorganized the work of the bursar's office, but he became immediately an integral part of student, alumni and Faculty life. Among the many ways in which the students appreciated him was the dedication of the 1908 *Technique* to Frank H. Rand, "an earnest worker, a promoter of good fellowship and a friend to every Tech man." In connection with Mr. Rand's biography, the 1908 *Technique* said the following:

"The wide practical experience through which he had passed

has made Mr. Rand's way sure from the first moment of his coming to his present position. He began by reorganizing the office, introducing the latest and the most approved methods of bookkeeping, and organizing the well-nigh innumerable accounts which the bursar must keep in order. He arranged the accounts dealing with the income, whether from the state, from investments, from donations, or from tuition; the essential, though petty, accounts which have to do with chemical breakage, locker-keys, and the many details of a similar nature; the salary accounts; the accounts for maintenance of the buildings; for the equipment of the numerous laboratories; the scholarship accounts; those dealing with the purchase of periodicals and books for the libraries; and such other reckonings as that of postage, in itself a matter of two or three thousand dollars. All these things were reduced to a system which works as neatly and as precisely as nicely oiled machinery.

"He has no less put into order and admirably exercised the other duties of his office, such as responsibility for the condition of all the buildings, the employment and the supervision of janitors, and the supervising of all new structures or of improvements of old ones. The manifold duties of his office can be appreciated only by enumeration, because under his management they are so ably accomplished as to seem to move of themselves; but they call for quickness of perception, for business ability and experience, and for the most effective tact.

"If Mr. Rand had stopped here he would still be an official of unusual effectiveness. He has, however, gone much further. Having got the business of the office in order, he turned his attention to the helping of students needing aid. His idea, as given in his own words, was: 'To build up a fund, the income of which shall be used to assist students who give promise of becoming efficient engineers, but who for some reason have in some one term failed to secure scholarship assistance, and need aid to enable them to complete the school year. There are many cases; men who are unable to secure aid from the Scholarship Committee, and who would perhaps be obliged to leave the Institute but for the timely assistance in the payment of a part of the term's tuition.' Some little money has already been obtained toward this fund, and it is the hope of the bursar to increase it to something like $4,000 or $5,000, a sum which will provide an income sufficient to meet the cases of this class.

"Another arrangement of great convenience to students Mr. Rand put into operation at the beginning of last year. This is a banking system by which students may keep at the bursar's office a deposit, and draw upon it as at a bank. The city banks will not open an account unless the depositor puts in at least $300, and keeps upon deposit during the year an average of at least $100. By the bursar's arrangement a student may keep on deposit any sum from $5 to $500, and the convenience is wonderfully great. At present the depositors number one hundred and seventy-one, with an average of total deposits of between $4,000 and $5,000. No interest is paid to the depositors, but such interest as accrues on the total is used to defray the expense of the necessary bookkeeping. About $50,000 a year is handled for the students by means of this wise and admirable banking system.

"One of the most recent of the many devices of Mr. Rand for student comfort and student convenience is the Tech Union Lunch. This was opened on September 26, 1906, and on the opening day fifty-five men were served with food, simple and well cooked, and at a price astonishingly low. The attendance increased rapidly, and in time has about quadrupled. Not only does this supply a want which, like all wants connected with the student's stomach, has been literally 'long felt,' but it makes possible a much better service in connection with dinners, so that societies and clubs which formerly went to the hotels for reunions now dine at the Union.

"It is in connection with the Union and the Kommers that Bursar Rand has been best known to the students. The great bulk of his valuable work is invisible to the general student, but the wonderful power of telling stories good and fresh which has been so generously exercised at the Saturday night meetings has made the bursar dear to every man in the Institute. A couple of years ago the Kommers were uninteresting and slow. Mr. Rand in the fall of 1905 took them in hand, and at once made them so attractive as to draw together large numbers of students. The influence in the development of the social side of the men has been invaluable. President Pritchett coöperated by appointing a man from each class to act as House Committee, and, acting in concert with this body, Mr. Rand succeeded in the not always easy task of forcing the most unsociable and preoccupied student to enjoy himself, and, for the time, to become a human being in touch and sympathy

with his fellows. He secured outside speakers, suggested means of entertainment, and, whenever a breach occurred, came forward himself to fill it by being the most entertaining speaker of any or every evening.

"No catalog of what Mr. Rand has done privately or publicly for the boys can be complete, because hardly a day passes without some act of kindness known only to the bursar and the student, and never told. The remarkably varied experiences through which he has gone, and which have fitted him for his position as if he had been in training all his previous life for this special post, have made it possible for him to appreciate the widely differing character of the undergraduates, their needs, their prejudices, their shortcomings and their virtues. That which is best in him, however, is not so much training as character. The students appreciate what he has done and what he is constantly doing; but whether they now reason it out or not, they will some day come to realize what has most attracted them, what has most truly created their friendly feeling, are that kindliness of spirit, that unselfish generosity, that genuine sympathy, shown by his every act and word in matters which in any way concern the interests of the students."

New Members of the Alumni Association

The following former students were elected members of the Alumni Association on the dates indicated:

May 19, 1913: William H. Ahern, '12; Charles E. O. Bickerdike, '12; Edward Henry Callahan, '01; James Driscoll, '02; Joseph Pryor Fish, '12; Charles A. J. McManus, '12; George Lee Paullis, '12; Oliver D. Powell, '11; Frederick A. Robinson, '12; Stewart R. Robertson, '12; Julius M. Rosenberg, '12; Howard Reed Schulze, '11; Samuel S. Stevens, '12; William Tryon, '69.

July 10, 1913: George H. Berg, '85; Arthur Dudley Buzby, '12; Frederick H. Dierks, '12; Herbert William Hall, '12; Edmund B. Moore, '12; Carl H. Morrill, '12; William Wheatley Mowry, '12; Frederic Warren Osborn, '12; Elliot Whitney Tarr, '12; Ralph T. Walker, '11.

October 20, 1913: Chester Cook Ford, '08; Marcellus F. Graupner, '12; Edwin Dana Pratt, '13; Fay Bailey Williams, '13.

December 5, 1913: Howard B. Emery, '89; A. J. Pastene, '13.

CHICAGO KEEPS OPEN HOUSE

Convention of Technology Clubs Associated to be an occasion to be remembered—Preparations are being made on a grand scale and a big crowd is expected—Special train from the East being arranged for

That the meeting of the Technology Clubs Associated in Chicago February 20–21, will be one of the most memorable of all our Tech gatherings is a foregone conclusion.

It was the Northwestern Association that started the new note among Technology alumni during the early 90's, and the Northwestern Association is preparing for the convention in the whole-souled western way that has always marked everything this organization has ever undertaken. Although there has been little opportunity to lay out a program, it is probable that the two days of the convention will be made out about as follows:

Thursday night, February 19, and Friday morning, February 21, registration at the Blackstone Hotel, which will be general headquarters for the convention, and which will be maintained until Sunday night for the benefit of those who stay over in Chicago until Monday morning.

On Friday, February 20, there will be a trip to Gary, Ind. This will occupy the day from about 10 or 11 a. m. till the latter part of the afternoon. Lunch will be served probably on the train or at Gary. A great many Tech men are interested in the great development of this city which was built to order largely by the United States Steel Company. It is full of interest for everyone, and the facilities offered for studying and observation will be of the best. Friday evening will be the big smoker and mass meeting, and election of officers in the great hall of the University Club, beginning at 8 o'clock.

On Saturday morning there will be class breakfasts and the choice of a number of alternative excursions to different industrial plants. Saturday at 1 p. m. will occur the departmental lunches, either at the University Club or the Blackstone Hotel.

At the meeting of the associated clubs in New York a year ago these departmental luncheons proved to be very interesting. It

was the first time the men had been brought together by departments, and it has seemed best to continue this feature—even if there is no opportunity for the classes to get together at luncheon.

At 4 p. m. Saturday there will be a tea and reception for members their wives and friends at the Chicago Art Institute. At 7 p. m. on Saturday will be the grand banquet at the Blackstone Hotel. Preparations for this banquet are being made, and speakers of national fame will deliver addresses.

It will be noticed that no dinners have been arranged for Friday evening, so that the classes can get together for dinner on that date and attend the mass meeting afterwards. The class of '94 has already indicated its intention of holding its five-year reunion at this time. Other five-year classes may do the same.

The committees which are to take charge of the arrangements for the reunion have been appointed and are holding weekly luncheon meetings. Local class boosters to look after the interests of the classes in Chicago are being appointed, and in each of the larger cities there will be a booster committee of the representatives of the various classes.

The New York club is taking active measure to send as large a delegation to Chicago as possible. The committee in charge of the arrangements so far as New York is concerned are as follows: Benjamin Hurd, '96, chairman; L. D. Gardner, '98, G. W. Kittredge, '77, E. H. Huxley, '95, G. F. Shaffer, '10, C.-E. A. Winslow, '98, O. C. Hering, '97. These men were prominent on committees which had to do with the arrangements for the last meeting of the associated clubs.

The Boston committee consists of I. W. Litchfield, '85, chairman; Henry J. Horn, '88, Arthur Alley, '91, J. Linfield Damon, '91, Russell Robb, '88. Transportation arrangements contemplate attaching at least two special cars to one of the trains leaving Boston February 19, the New York men taking the corresponding train. These trains will meet at Albany, and it is possible that with the accessions, along the line, of those who will attend from the Albany and Schenectady clubs, the cars will run as a "special" or rather as a second section to the Twentieth Century Limited from there to Chicago. Arrangements will be made to take on men along the line of the New York Central, which includes the clubs at Syracuse, Rochester and Buffalo. It is believed that a considerable train can be rolled into Chicago

Friday morning. The train will be appropriately decorated with banners.

The Chicago committee will want to know as early as possible how many guests to expect. The Association of Class Secretaries will hold a meeting soon after the middle of the month to discuss the matter, and will probably send out return postal cards in order to make a proper canvass. It would assist a lot, however, if those who do intend to go to Chicago would drop a note to their class secretary, as this would not only help the general committee but would help the class committee in making arrangements.

The Northwestern Association is getting out a new directory so that it will be absolutely up-to-date at the time of the reunion. It is intending to mail this with future reunion notices so that visitors can locate their classmates in Chicago.

The officers of the Technology Clubs Associated are: William H. King, '94, New York, president; Walter Humphreys, '97, Boston, secretary-treasurer; George B. Jones, '05, Chicago, associate secretary; G. W. Kittredge, New York, I. W. Litchfield, '85, Boston, F. E. Shepard, '87, Denver, John L. Shortall, '87, Chicago, F. A. Smythe, '89, Lorain, Ohio, S. B. Ely, '92, Pittsburgh, vice-presidents.

The new officers of the Northwestern Association, which are taking charge of the reunion in Chicago, are: Solomon Sturges, '87, president; Kenneth Lockett, '02, vice-president; George Bayard Jones, '05, secretary, 1444 Monadnock Block, Chicago, Illinois.

The presence of two Russian mining engineers and metallurgists who have recently registered at the Institute, calls attention to the changing attitude of Europeans toward America as an educational center for mining engineers. Formerly European students were sent to Freiberg or some other school on the Continent. The two Russian students in question are graduates of Russian institutions and have come here to obtain knowledge of Technology methods of ore-dressing and of teaching in the mining specialties.

A bequest of $4,000 to the Massachusetts Institute of Technology is provided for in the will of the late Louis Weissbein. This money is to be used for a scholarship to be awarded preferably to Hebrew students.

NEW YORK CLUB EXPANDING

Subscriptions of $20,000 have been made to improve the club house—Some of the changes to be made—Campaign on for five hundred new members—New York Tech business directory published

The splendid work done by the members of the Technology Club of New York two years ago has resulted in placing that organization upon a very substantial foundation, ranking it with the four or five college clubs having club houses of their own in the Metropolis. The energetic campaign for new members at that time resulted in securing a membership roll of over a thousand men, a large number of them being associate members located all over the country. This has resulted in making the club national headquarters for Tech men who visit New York, and the plans which are now ready to be put into operation will make the club features more desirable than ever.

With the great increase in membership, it was obvious that larger and better accommodations would have to be provided. The board of governors took up the matter about a year ago, and after discussing it thoroughly, appointed a building committee consisting of N. G. Nims, '90, Allen Hazen, '88, F. C. Schmitz, '95, J. Waldo Smith, '87, and G. H. McCarthy, '97, to investigate and report. The question of building a new club house seemed to be a much larger undertaking than the conditions would warrant. It was decided, therefore, to renew the lease of the present club house, 17 Gramercy Park, for a period of fifteen years with an option to extend the same for another five years, and to remodel and improve the club house in a very substantial manner.

A little quiet canvassing among Technology men in New York and elsewhere resulted in the raising of a fund of over $20,000 by popular subscription. Fifteen thousand dollars of this will be used for carrying out the plans of the building committee, and five thousand will be kept in the treasury to be used for working capital. Over 80 per cent. of the subscription has been paid in, and building operations will begin at once.

The estimate of the building committee for the improvements to be made is as follows:

For alterations and additions	$10,000
Decorating café	200
Tile floor and wainscot in third and fourth floor bathrooms	325
Kitchen fittings	375
Refrigerators	500
Electric fixtures	200
Furniture	1,000
Architect's expense	500
Contingent expenses, including cost of new roof	1,400

The club is to be enlarged by adding a twelve-foot extension at the rear running all the way up to the roof. In the basement the service pantry will be enlarged by a twelve-foot extension, and the kitchen will also be increased to that extent. Service stairs and dumb waiters will be built in. The entire basement will be remodeled and provided with a new cement floor, new plastering and new complete kitchen equipment, including large refrigerators.

The first floor will have a twelve-foot addition to the present dining room, making the enlarged dining room 46 feet long. A bar will be installed and the breakfast room will be redecorated and made into a stein room, where a member may buy perpetual right to a wall hook for his "pipe and bowl," having his name engraved on the hook plate. The marble floor in the entrance hall will be relaid, and new office and coat room provided.

On the second floor the billiard room will be enlarged to give accommodations for two tables, and the present billiard room will be changed into a card room.

On the third floor the added area will provide for two additional bedrooms and a new tiled bathroom.

On the fourth floor there will be one additional bedroom with large closets and two new tiled bathrooms. A new floor will be laid. The central part of the fourth story will be made into a "lounge" room, lighted by a skylight to be placed in the roof.

All parts of the house will be repainted and redecorated, and the windows will be hung with new shades and curtains. New lighting fixtures, new plumbing, silverware, china and furniture will be added wherever required. The capacity of the boilers will be in-

creased, and a new tank provided to give ample pressure to the water supply.

It will thus be seen that the transformed club house will be a tremendous improvement over the old one. It will offer advantages for non-resident members that have never before been available, while the members living in the city will find here added facilities for comfort that could not be provided in the old house.

The reason for the substantial success of the Technology Club of New York is easily revealed when one understands its business and social organization. It is not a one-man affair in any sense of the word, nor is it governed by a few interested men. Besides those officers that are necessary to administer such an organization, there are a great many special committees, each of which is composed of men of ability, who devote themselves to the advancement of the club in a most enthusiastic way.

It must be remembered that it was only in 1909 that the Technology Club of New York secured the lease on the Gramercy Park house. The membership at that time was not really large enough to properly support the club, and in addition to the unknown obligations the club incurred at that time there were certain changes in the house which had to be made before it could be used for the purpose at all. The money for these changes had to come out of the regular income, and the club started handicapped to some extent. Furthermore, it was found necessary to carry a line of about $3,000 overdue accounts with the members, and this was difficult without any capital to be devoted to this purpose. It is only fair to say that these overdue accounts have resulted in practically no loss on the house account, and only a very small percentage in dues. It is believed that the record of the club in this respect is unequalled by any college club. The treasurer showed in his report that on November 1, last, that the club owed less than $500 on bills contracted for prior to that time.

The activities of the club have been many and varied. A business directory of the club members has just been published and distributed. This is an unusual enterprise, and one of considerable difficulty, but it has been put through with credit, and it will be of great advantage to all Technology men who are able to secure one. The club publishes a monthly bulletin under the auspices of the publicity committee giving the club-house news and announcements, as well as general Technology news.

The annual dinners of the club are of an unusual character, and last year at the celebration of the tenth anniversary of its foundation, the Technology Club of New York invited representatives from all the alumni associations in the country and started the movement for the Technology Clubs Associated. The two days' convention in New York last January had a great effect in bringing Tech men together and in emphasizing the national importance of the Institute and its work.

It has an "opportunities committee" whose duty it is to bring together men seeking employment and employers seeking men. The committee was successful during last year in pleasing a number of applicants. A new feature of the committee work is coöperation with the chairmen of similar committees representing Harvard and Princeton, and it is probable that Cornell and Yale will be represented with these other three colleges during the coming year.

One of the most important committees, the house committee, is also one of the most efficient. A great many small improvements have been made during the past year, among the more important changes being the engagement of a new and very capable steward, who has changed the general atmosphere of the house and contributed in a marked way to the comfort of the members. Private letter boxes have been installed, the coat room remodelled and the entrance hall enlarged. The cuisine has been improved and à la carte service provided, as well as valet service.

The club also has a library and art committee, which is actively engaged in securing additions to the library and pictures for the club house. When the improvements to the club house are completed it is believed that a number of valuable contributions will be received.

There is also an entertainment committee, a nominating committee, a reception committee and a membership committee.

Upon this latter committee the club bases its hopes for the future. The actual start of building operations will mark the beginning of a determined campaign for 500 additional members, the slogan being "1,500 by January 1, 1915." There are today 996 members in good standing, of which 448 are residents and 539 non-residents, with 5 life and 4 honorary members.

It only seems reasonable that if the club could secure such hearty support under the old club-house conditions, it ought to be a com-

paratively easy matter to secure the added membership desired, with every advantage of modern club life to offer.

The club at Gramercy Park should be the New York home of every Institute man. It will offer special advantages to men within three or four hundred miles of New York who make frequent trips to that city and who oftentimes have business relations with other Technology men. Business relations among Tech men have grown to a very marked degree,—not simply because they are Tech men, but because such men are coming more and more to represent the important industries of the country. It is generally believed that the Technology Club of New York will become a common meeting ground for such, and that the business side of the club will be developed to a large degree.

The particular feature of the club which is most striking to the visitor is its loyalty to the Institute and to all its interests. It is always ready and anxious to coöperate in any sort of team work that will assist President Maclaurin in his efforts to further the interests of Technology, and the tremendous enthusiasm of this organization has resulted in creating a great Technology center in New York, which is making the Institute favorably known in that very important community.

Class Constitutions to be Unified

The Institute Committee has been studying the matter of class constitutions, and forms to be adopted by the different classes have been agreed upon and approved by the committee. In case of the freshman class there are special provisions. According to the new constitution instead of a temporary chairman elected by the freshmen, five men from the junior class will be appointed by the Institute Committee who will act as temporary officers of the freshman class. This procedure will remedy many evils that have been common in the past, and is looked upon as a long step in advance. The temporary officers of the freshman class will only act until the permanent officers are elected, which will be five or six weeks from the beginning of the year. It will give the freshmen, however, ample time to choose more wisely than has sometimes been the case.

THE COURSE IN MECHANICAL ENGINEERING

Many important changes made to readjust the course—General aim to give a more thorough training in the fundamentals and overcome the tendency to specialize in details

The course in mechanical engineering began to come into prominence as one of the strong courses of the Institute when Professor Lanza took charge in 1882. The number of students increased steadily until this department became one of the largest in the school. The strictly professional subjects taught the students were added to from time to time in order to keep pace with (and in some cases to anticipate) the developments in mechanical engineering, which is one of the broadest of the engineering professions.

In the fall of 1911 the members of the department decided to revise the course in order to add, if possible, a number of important subjects in which it was felt that every mechanical engineer should be trained. The department at this time investigated the subject matter taught its students by its own staff and by the staff of other departments, to ascertain if there were any duplication of effort which might be avoided and thereby time saved. As a result of the investigation a number of subjects were either given up or put into the course at a time when the student would be better able to appreciate the work. It was also found that, by preventing duplication, a considerable amount of time could be saved.

The changes made may be briefly summarized as follows:

Subject	*Hours reduced by*	
Mechanic Arts, total of 2d, 3d and 4th years	120	
Drawing, total of 2d and 3d years	18	
Mechanism and valve gears	70	
Heat engineering	30	
Heating and ventilation, 3d year (dropped)	15	
Engineering laboratory, 3d and 4th years	10	
Foundations	25	
Options	120	
Metallurgy of iron (dropped)	30	
Machine design and boiler design	15	
Hydraulic motors (dropped)	90	
The total amount of time gained amounting to	543	hours

This time was utilized as follows:

Subject	*Hours increased by*
Physics and physical laboratory	35
German (reading scientific papers)	30
App. mechanics and testing materials, laboratory	10
Mathematics	30
Surveying	18
Mechanism of machines (new course introduced in 2d term of 3d year)	65
Physical chemical properties of engineering alloys (a new course)	30
Electrical engineering subjects	15
Factory construction (a new course)	45
Theoretical hydraulics	30
Hydraulic engineering (a new course)	105
General engineering lectures (a new course)	30
Refrigeration (a new course)	45
Industrial management	10
Heating and ventilation (a new subject given in the 4th year)	45
Making a total of	543 hours

The reduction in the time in the mechanic arts has been mainly in that given to forging and to carpentry and wood turning.

The time allotted to foundry work has been increased very appreciably. The order of the shop work has been changed, forging coming first, then foundry work, which is followed by pattern work. The students after having had a thorough course in foundry work understand the object of a pattern and know how it should be made in order that a casting may be obtained with the least work in the foundry. Carpentry is taught in connection with pattern making.

The department has introduced a method of teaching mechanical drawing which, it is believed, will enable the men to read a drawing much more quickly than under the old method of instruction. The men are first taught how to make drawings in isometric and in perspective, they then put an authographic projection of a simple piece into isometric. This simple piece is then followed by more difficult pieces until finally the men get in the habit of visual-

izing a drawing. This method has now been in use two years with good success.

The time devoted to foundations has been shortened and the course transferred to the civil engineering department, which it was felt was better able to give this course than the mechanical engineering department.

For many years a student has had a choice of one of his major subjects taken in the senior year. He made his selection from the five "options"—mill, locomotive, turbine, heating and ventilation and marine engineering. The heating and ventilating option has been dropped and a new course covering the subject is now given to all, in about one-third the time. Marine engineering has been given up and engine design substituted. The time given to these options has been reduced nearly 50 per cent. and the department plans in the near future to give to every student the essentials of each of the options instead of a large amount of the detail of some one option.

The course in metallurgy of iron has been given up and in its place a course on the physical chemical properties of engineering alloys has been added. This course deals briefly with the metallurgical side but takes up in detail the physical properties of the different alloyed steels. The heat treatment of such steels is also discussed at length. Work of this nature is of the greatest value to a mechanical engineer.

Machine design has been moved back into the third year so that under the new schedule the men design a boiler, heat accumulator, or other type of pressure vessel in the second term of the third year. They have also 120 hours of machine design in the fourth year.

Thirty hours have been added to the work in mathematics in order that the men may get practice in using as a tool what mathematics they have already learned.

A course in mechanism of machines has been added in the second term of the third year. All types of mechanical movements and mechanical combinations such as are found on machine tools, cotton machinery, shoe machinery, box machinery, etc., are discussed and drawings of the same given to the students. To make sure that a student studies these drawings he is asked to figure the acceleration or speed of some part of the mechanism.

Factory construction, another new subject given in the first term of the fourth year, takes up such problems as the location of a factory, the type of building, the material to be used in construction, and the design of a factory suitable for a certain product. The class of '14 is now engaged on the design of a machine shop.

The course in refrigeration is an extension of the work which has been given in a brief course under the heading "Heat Engineering." The rapid growth of the refrigerating industry makes such a course a necessary part of the mechanical engineer's training.

For a number of years a course of 60 hours on power station design has been given in the second term of the senior year. This course makes a fitting ending for the course in heat engineering in the same way as does machine design for the courses in applied mechanics and mechanism.

In general the aim of the revision has been to give the students a more thorough training in the fundamentals and not to specialize on minor details which are of little value to a student and which he soons forgets. With a view to finding out how our methods of teaching could be improved, each member of the senior class of '13, in mechanical engineering, was invited to come before three members of the department and talk freely about his work in the department, telling how much time each subject took, how the presentation of any subject could be improved, etc. The students coöperated heartily with the committee. Every student came before the committee and none objected to having his statements taken down by a stenographer. The information gathered from 215 pages of typewritten matter obtained in this way has been of great value to the department. Such information could have been obtained in no other way.

The growth of the department has been appreciable since the change in the schedule of studies went into effect.

The percentage increase in the number of students in the department for the year 1912–'13 over the average for the years '06–'07 through '11–'12 is	16.8%
The percentage increase for the year '13–'14 over the same period as above is	34.1%
The percentage increase for the year '13–'14 over '12–'13 is	14.8%
The percentage increase in the total number in the Institute in year '12–13 over the average from '06–'07 through '11–'12 is	9.9 %

The percentage increase in the total in '13–'14 over the average total from '06–'07 through '11–'12..... 14.7 %
The percentage increase in the total for '13–'14 over that for '12–'13 is..... 4.59%

In order to secure uniformity of effort, to improve the quality of the thesis work, and to make the results of such work more valuable to the engineering profession and at the same time to prevent a student from delaying his choice of a subject till late in the term, the department has prepared special cards. On one of these cards the student makes application for the subject he desires for his thesis. This subject is considered by the Faculty members of the department and the student notified of the action taken. If the subject is accepted he is assigned to some member of the staff who acts as his adviser in this work. Every two weeks the student reports to the department on a second card what progress he has made.

At present there are forty-one members of the instructing staff, including those in the mechanic arts which is now an integral part of the mechanical engineering department. All matters relating to instruction are discussed by the entire staff at conferences called as often as may be necessary. In addition to the conferences the instructors in the different branches of the work hold meetings at frequent intervals. Many valuable suggestions have been made at these meetings by the younger members of the staff, who frequently appreciate more fully than the older instructors the difficulties experienced by the students.

EDWARD F. MILLER, '86.

China has sent more students to the Institute this year than ever before in its history. There are 42 Chinese on the rolls, and most of these are engaged in the study of naval architecture and marine engineering. The condition of Chinese commerce, as well as the great opportunities that the navy of that country affords, have led these Chinese students to take up this branch of engineering, and their work in general is to be highly commended. The Chinese form by far the largest national representation in the Cosmopolitan Club. They recently gave an entertainment at the monthly meeting of the club, which was of great interest to the 800 people who constituted their audience.

PRESIDENT MACLAURIN'S MESSAGE

An appreciation of the direct assistance of the alumni—A laboratory of ærodynamics—Business engineering an appropriate field for Technology—Future policies

President Maclaurin's annual report was read at the meeting of the Institute Corporation December 29. As usual, it is a most interesting document, and we reprint that portion of it, which has most interest for the alumni, in its entirety. It is as follows:

Your Corporation has no control over the alumni and no responsibility for their doings, but, in so far as their activities affect the present condition or future welfare of the Institute itself, some reference to those activities may not be out of place in this report. It is difficult to exaggerate the value of the support of the alumni in furthering the interests of their Alma Mater, and there is nothing in the educational system of America that so impresses the foreign observer as the extent and the character of the interest of the alumni in the institutions with which they are connected. There is nothing really comparable with this in any other country. Here in many cases alumni concern is more than an interest; it is a passion. The collective consciousness of the alumni of Technology developed somewhat slowly; but it is abundantly manifest today, and, fortunately, shows itself in ways that are highly beneficial to the Institute. It is not merely that alumni associations are springing up everywhere, although this can scarcely fail, in an indirect way, to advance the interests of Technology. What is especially gratifying is the fact that the alumni in large numbers are ready to make great sacrifices of time, of thought and of money in helping forward their Alma Mater. This spirit shows itself at every great gathering of the alumni and cannot fail to be stimulated by the activities of the Technology Clubs Associated which was organized and set in motion under such favorable conditions in New York early in this year. As specific evidences of the spirit to which I have referred, I would direct your attention to the work of four committees of the alumni—the Alumni Fund Committee, the Student Housing Committee, the Walker Memorial Committee, and the Committee on Business and Engineering Administration.

The work of the last three has led to the production of most lucid and able reports that cannot fail to influence the policy of your Corporation and help it to solve some of the most important problems with which it is confronted. The work of the Fund committee has not yet been described in a final report; for that committee is still in the midst of its activities. The fact, however, that it has already secured more than half a million dollars as contributions to the funds of the Institute is convincing evidence that its work has been effective and cannot fail to earn the gratitude of your Corporation—gratitude that will, in this case, be more than a mere lively sense of benefits still to come.

Some Events of the Year

Of the events of the year, the one that stands out most conspicuously is the definite settlement of the plans for our new buildings following the appointment early in the year of Mr. William W. Bosworth as architect, associated with Prof. J. Knox Taylor, as consulting architect. Both of these architects are alumni of the Institute and are devoting themselves to the problems presented in the spirit of alumni. As in all matters of taste, there are likely to be differences of opinion with regard to the architectural forms that have been adopted in the solution of our problems. I believe, however, that the simplicity and the dignity of the style chosen will make an appeal to discerning minds; but whether this be so or not, I think there can be no doubt that the plan is one that lends itself admirably to the problems in hand, especially to the difficult and fundamentally important problem of future expansion.

The strictly architectural problems presented by our new buildings appear from some points of view less important than the engineering problems. In the solution of these latter problems, the Institute has been especially fortunate in securing the coöperation of a number of specialists in foundations, structural design, heating and ventilation and the like, all of them alumni of Technology ready to give their Alma Mater the benefit of their experience on most favorable terms. I feel that we are peculiarly fortunate in having secured the services of the Stone & Webster Engineering Corporation as construction engineers. This selection was strongly recommended by a special committee of your Corporation—Messrs. Vail, duPont and Wigglesworth—and it is a constant pleasure to

see how efficiently the officers of the engineering corporation are handling every detail of the complex problem that is presented.

Interest in the physical development of the Institute must not divert our attention from the great educational problems with which it is always confronted. The educational work of the year has been carried on as enthusiastically and effectively as ever by the Faculty, in spite of the extra load imposed upon them by the consideration of plans for new buildings. Not only has the regular work been carried forward, but the provision has been made for new growth. Within the year there has been set up a new course in industrial physics as one of the options in Course VIII. This new course is intended to meet the increasing demand in various branches of industry for men with a sound knowledge of physics who have been trained to apply that knowledge to the problems of industrial life. It is a course that cannot fail to be attractive to a considerable number of ambitious youths who realize the possibilities for useful service that such a course will open to them. In the department of electrical engineering, an important forward step has been taken by the setting up of an organization within the department for carrying on research in this great branch of applied science. This establishment of a properly staffed laboratory for the conducting of such research has been made possible by the support of the American Telephone and Telegraph Company, and of other corporations and public-spirited individuals.

Within the year, an important step has been taken in the direction of making adequate provision for developing the science of aëronautics. In earlier years something had been done by way of a beginning, but the time seemed ripe for putting things on a more permanent basis. Through the active interest of the Secretary of the Navy, Mr. Jerome C. Hunsaker of the corps of naval constructors, has been detailed for service at this Institute. Mr. Hunsaker, who is a graduate of the Institute, has been attached to the Department of Naval Architecture and is to devote his main energies to coöperating with other members of the Institute's staff in developing courses of instruction that are designed to train aëronautical engineers and in promoting research in that branch of applied science. Immediately after his appointment here, he was despatched to Europe to visit the principal aëroplane and airship factories and aëronautical laboratories in England, France and Germany. He has recently returned with much

information as to what is being done abroad and with a keen desire to stimulate advancement in this country. Mere descriptive lectures dealing with aërial flight in a general and popular manner would be out of place in the curricula of the Institute, although they might be appropriate to the activities of the Society of Arts. An aëronautical engineer cannot be trained by such lectures. What he needs is carefully planned courses in the theory and practice of aircraft design. These courses may be offered as new options in existing courses or otherwise, but in any case, to be worthy of the Institute, they must be at least as rigorous and exacting as any of the existing professional courses. To make this possible in a way worthy of the Institute's traditions, it will be necessary to have a properly equipped laboratory for experimentation and research in certain subjects not dealt with in the existing laboratories of the Institute, and it is hoped that means will be found to supply this need in the immediate future. Ten years ago this country was the leader in the art of flying. It has not, however, followed up this advantage by a systematic attack on the difficulties that have to be overcome if further progress is to be expected. It is now far behind the Old World in the equipment of laboratories with men and machinery necessary for thoroughgoing research and the Institute of Technology must do its part in making good this deficiency.

Another matter that has been occupying the attention of the Faculty during the year and is still under consideration by that body is the question of establishing a course of engineering administration. This question was raised in very definite form by a report already referred to—the report of a committee of the Alumni Council on a course in business engineering. There has been a growing tendency for many years to encourage the attempts of the schools to pay special attention to the needs of the prospective man of business. This movement has been checked to some extent by the feeling among business men that aptitude for business is not a thing that can be acquired in the schools. It must be recognized, however, that objections of this kind have been made to every suggestion of giving professional training in a school. Men have said that it is impossible in this to train doctors, or lawyers, or engineers, and that the only training worth anything is the training of experience. After so much discussion a clearer view should prevail. It is, of course, true that no one can be made successful

either as a doctor or a lawyer or an engineer or a business man by training in a school if nature has not given him the necessary aptitude. The only real question, however, is—"Can the school help a man who has this aptitude, or would the time that he might devote to studies and pursuits designed to help him be better devoted to something else?" The conviction that something might be done to train the man of business has led in recent years to the establishment of schools of business or of commerce in many of our colleges and universities. There have been men who have advocated the establishment of such a school within this Institute, holding that the scientific spirit and the scientific method of attack that it is the special function of Technology to instil into the minds of its students would be a powerful aid to many business men. Whether this be so or not, there can be no doubt whatever that as business is organized today and especially as it is likely to be organized in the future, there must be many business men to whom a sound knowledge of certain basic facts and fundamental principles of engineering are indispensable. The report of the committee to which I have referred concentrates attention on men of this class and recommends the establishment of a course specially designed to train men to be competent managers of businesses that have much to do with engineering problems. This is an important field that has scarcely been cultivated at all elsewhere and one that it seems eminently appropriate for the Institute to enter.

An accomplishment of the year that is of great prospective significance is the establishment of a school for health officers to be carried on by the Institute in coöperation with Harvard University. Technology was a pioneer in this field and could, doubtless, have continued to do splendid work for the benefit of society without any assistance from other institutions. It is only necessary, however, to examine the courses that are now offered by the joint school to see that the Institute has been greatly strengthened by the association with Harvard and to be impressed by the extraordinary wealth of opportunity that is now presented to the students in this school,—a wealth of opportunity that neither institution, acting independently, could have afforded. The significance of the association lies mainly in the emphasis that it lays on the all-important fact that it is the primary duty of every educational institution to free itself from selfish points of view and to look exclusively at the good of the students that it can influence.

It is significant, too, as proving that two entirely independent institutions can carry on a joint effort that calls for intimate association, and carry it on without friction or difficulty, provided only that each has a single eye to the welfare of the students, and through them to the good of society.

Some Problems of the Future

One of the main sources of interest to any one connected with a successful institution, such as this, is that the institution is never at rest. Old problems are constantly being presented in a new form and new problems are arising continually. I should presume too long upon your patience were I to enter into a discussion of all the various problems that lie immediately ahead of us, but some of these problems are so pressing as to call for immediate mention and attention. One of these is the problem of dealing with the present property of the Institute so as to facilitate our movement to the new site. We have much valuable property in this neighborhood and naturally we should try to dispose of it so as to use the proceeds for carrying on the great educational work that lies before us. The importance of that work grows steadily as the years advance and there can be no doubt that the field of applied science that we have made peculiarly our own is going to be one of the most important, if not the most important, in the domain of education in the generations to come. It is a costly field to cultivate, and must become more costly, and we shall need all the financial support that we can get for cultivating it properly. Our land and buildings in Trinity Place can doubtless be disposed of in the not distant future on reasonable terms, but as yet we are not in the position to answer the question—"What are we to do with our Boylston Street property?" I need not take up your time by recounting the history of our acquisition of this property or by attempting to explain the uncertainties that surround our rights in that property today. At last there are signs of the coming day when we shall know exactly where we stand in this matter; for our petition to have all the matters in dispute cleared up authoritatively is now before the courts. Meanwhile, it might be prudent even before a decision be reached to give some thought to the question of what policy we should pursue in case of certain eventualities.

A problem equally pressing, if not more pressing, is the problem of making provision for the students, and to a certain extent, for

the Faculty on our new site. Within a short time we shall have two thousand men on that site, and we should do something to house them, and, if possible, provide them with meals and with facilities for social intercourse. The valuable reports from the Student Housing Committee and the Walker Memorial Committee already referred to embody practical suggestions as to how these problems should be solved, and the only thing that stands in the way of such solution being the lack of the necessary means.

Another important problem of a different character is that presented by the steady growth in the number of our students. There have been some fluctuations in growth since the Institute began, but the forward movement has long been evident and it is apparent that we are now in the midst of a period of unusually rapid growth—a growth that is likely to be stimulated rather than retarded by our movement to a new site. What should be our policy with reference to increasing numbers? May we not be within measurable distance of a time when it will be necessary to impose artificial restrictions on our growth lest we become too large for effective management?

Finally, there is the old problem of satisfying the growing demands on the financial resources of the Institute. This is a matter which is perennial in presidential reports, and I appreciate the danger of making it stale by constant repetition. I feel, however, that at the present juncture we are face to face with an unusual danger. After a long period of very lean years, the Institute is at last coming into its own in the matter of financial aid, and coming into it so rapidly that the community may imagine that all its needs must now be satisfied. Under these circumstances, it is important that every member of our Corporation should realize the facts. In moving to a new site we have embarked on a policy of *trust in the future.* The successful carrying out of the plans to which we are committed demands the expenditure of many millions. It is true that some millions have been given, but much that has come to the Institute in recent years is earmarked for special purposes that either do not assist at all or assist only indirectly in the fulfilment of the plans to which I have referred. We have scarcely enough money in sight to complete the educational buildings. When they are completed, they must be equipped and maintained, and the maintenance charges will necessarily be much higher than those of the relatively small plant

that we have today. In addition to that, there are certain indispensable adjuncts of the educational buildings for which up to the present nothing has been forthcoming. Our buildings must be lighted and heated, and this will call for a well-equipped power house that will cost a very large sum. Dining rooms of some kind should be provided for the students and the Faculty, an athletic field and gymnasium are practically indispensable; and a dormitory system is urgently needed. In addition to this the grounds must be laid out, simply no doubt, but none the less consistently with the dignity of the institution. We have scarcely anything as yet for any of these purposes. While all this is to be done we must not be permitted to halt our policy of paying better salaries and thereby securing the services of the best teachers that are available.

In such circumstances it should be evident that the Institute needs the strongest support today if she is to go forward as she should. There can, of course, be no thought of backward movement or of rest.

Alumni Association Election

The election of officers by the Alumni Association of the Massachusetts Institute of Technology has resulted in the following board: President, Jasper Whiting, '89; vice-president, Henry J. Horn, '88; secretary and treasurer, Walter Humphreys, '97; executive committee, Joseph H. Knight, '96, James F. McElwain, '97, and Herbert N. Dawes, '93; and for representatives-at-large, Franklin B. Richards, '84, of Cleveland; Charles W. Eaton, '85, of Haverhill; Frank A. Merrill, '87, of Boston; George C. Whipple, '89 of New York, and Sumner B. Ely, '92, of Pittsburgh. Three amendments to the constitution, which create the class of "sustaining members" and which make the president of the Technology Clubs Associated *ex-officio* third vice-president of the association, were carried with few dissenting votes.

One of the important matters of business was the nomination of three men to be term members of the Corporation of the Institute, subject to acceptance by the Corporation. Those men nominated for term members, who are to serve for five years, are: Frederic H. Fay, '93, Franklin W. Hobbs, '89, and Gerard Swope, '95.

ATHLETICS AT THE INSTITUTE

Excellent standing of track and cross-country teams—What our plan of physical exercise does for the diffident student —Plea for coöperation by the instructor in physical exercise

Sport for the good of the greatest number is more literally exemplified at M. I. T. than one realizes.

Each year more students are learning the benefits of participation in athletics to their physical and mental welfare. This increase in numbers has created a keener rivalry for places on competitive teams and has resulted in a continual advancement in our inter-collegiate standing.

Our relay teams have won five of their last seven B. A. A. races, this being the banner event in indoor meetings, and in 1909 won third place in the inter-collegiate indoor relay championship, being defeated by Harvard and Columbia. In 1910 we advanced to second place, Syracuse winning, with Cornell third. In 1911 we won the championship, Cornell and Syracuse taking second and third, respectively. In 1912 we sent teams but were defeated mainly through crowding at the start.

In cross-country running Cornell has taken our place on the Harvard schedule, our dual meets with the latter college having terminated in an even score. In our other dual runs we have met defeat but once. In the cross-country championships of the Inter-collegiate Association of Amateur Athletes of America, we have twice taken second place, finished third twice and sixth once. In the 1913 championship Cornell won with Harvard second, and we took third place, thereby defeating such worthy competitors as Pennsylvania, Yale, Princeton, Michigan, Dartmouth, Syracuse, Brown, Columbia, Pennsylvania State and College of the City of New York.

In track and field competition we have lost but one dual meet in seven years and that to Dartmouth which is now considered far too strong for the New England inter-collegiate members. Our New England inter-collegiate championship efforts have met with varying success, having once in the early years of the association,

1894, won the championship and in the last six years, taken second once, third three times and sixth twice.

The teams returning the results as above shown are made up of average material and never, in at least the last seven years, have we had a winner of an interscholastic, or any other athletic championship, report for athletic purposes. This is probably the only institution of recognized athletic standing in position to make such a statement, showing that average non-athletic students at the Institute receive the attention usually devoted to the already proficient.

To hold our rating it is necessary to encourage a greater number of students each year to take part in all our intermural events, thereby creating a competition that will gradually raise our standard and by numbers offset the superior ability of the members of opposing teams.

The adoption of compulsory physical training for freshmen has been a step in this direction as substitution of various forms of athletics is allowable and each year a greater number are partaking of the sports in lieu of the regular gymnastics.

This latter movement met with the approval of the Faculty committee on physical training and in its workings has warranted all the attention that those interested have given it.

Our students, generally speaking, are non-athletic. Left to their own discretion in regard to physical exercise, they would have no time for practice. The class work at the gymnasium gives the impression that even the boyhood games must have been seldom played. These students are not aware that they are really physically deficient, and, indeed, few of them really understand how much may be done to improve an undeveloped physique even in the short time that we have at the Institute for physical exercises. It is a fact that has been demonstrated in hundreds of cases in our own experience, that proper physical development of the body gives poise, aggressiveness and self-confidence to men who have previously suffered from diffidence and self-consciousness.

At the outset in the course in physical training one is surprised at the students' utter lack of coördination of mind and muscle exemplified in the simplest exercises, the inability to "break" a fall, the treating of failures more as jokes than reflections on physical condition. This is less noticeable in those reporting for athletics, yet the fact seems plain that the early training in outdoor exercise has

been considerately neglected. This can be somewhat explained by the attitude even now displayed by a few of the parents of members of freshman classes. In one instance a man, evidently a truant from most forms of out-of-door sport, took a tumble in the gymnasium and raised a slight swelling on his head. A request was received from one of his parents to the effect that he be given exercise less likely to hurt himself as he was awkward! This explains a great deal of the desire to dodge an obstacle which some day must be overcome.

In our athletics the man handicapped by lack of self-confidence, having no push, no personality, is more easily singled out than in the gymnasium or perhaps the classroom. On the athletic field he shrinks from reporting as a candidate, he takes his training in a shy manner as though fearful of an error of some kind; he changes from street clothes to athletic suit and *vice versa* in a far corner and painfully avoids conversation with those of experience or in authority. This man receives, without realization on his part, a training in the making of a man as well as of an athlete, as it has been the policy of the department to have special consideration for this type of man. He receives the same treatment as the best athlete, and can see for himself that his daily task in training has been carefully thought out. He is placed in position to occasionally enter into training talk, then in some slight matter his opinion may be asked and so on until he "finds himself"; and if he does not gain his varsity letter, he has learned to mix with men and a new phase of life has presented itself to him.

Although we obviously make for recreation, health and possibly personal ambition through our athletic system, we contend that there is considerably more to be realized and our appeal is continually being made to the students to enter into athletics rather than the gymnasium practice; for the former contains, if instructions are followed, the good of the gymnasium plus the advantage of meeting more "live" fellow students and, if fortunate enough to make a position on the athletic team, to meet many men of a good type in other universities.

It is also well known that systematic athletics offsets the tendency to nervous breakdowns, fortifies against the nervous fear of meeting tests or examinations and many men at the Institute have credited their success in completing their course largely to the benefits of our system of sane athletics.

The advisory council on athletics have been working for the promotion of this department in order that men may receive the proper amount of competition to hold their interest. We are now in the peculiar position where we are too good for the smaller colleges and not quite strong enough for the larger ones, so that, to take a place in keeping with the standards of the Institute, we must have help from many sources.

The cramped quarters at the present gymnasium will soon be replaced by adequate accommodations, so that instead of the different teams being assigned certain days for practice they may all have facilities for more regular training with the necessary equipment. The new athletic field will allow men living in the suburbs to participate in athletics where it is now prohibitive on account of the time spent in traveling to our athletic field in Brookline.

Our greatest need is a keener realization on the part of the parents of the average student that our physical training and athletic systems are a necessary part of their sons' training; that they are under the supervision of a Faculty committee in the former course while athletics are supervised by an advisory council made up of competent business and professional men. These committees have the responsibility of providing a properly qualified instructor.

A fuller knowledge of the underlying spirit of our athletic training at Technology would assure the parents of our students that their sons are not being sacrificed merely for athletic exploitation, but that their physical welfare is given studied consideration with reference to the demands of the profession they are to adopt; and if parents would realize this and do all in their power to influence their boys to give conscientious attention to the physical side of their work, the Institute would have a much larger number of athletics candidates above the average and would stand better in inter-collegiate athletic work. But more important than all else, the Institute would graduate men better equipped for the serious years of professional life they are about to encounter.

FRANK M. KANALY.

Chicago expects 1,000 Tech men at the convention. This means a big time.

DECEMBER COUNCIL MEETING

Arrangements for convention of Technology Clubs Associated—Lieut. Hunsaker '12, talks of æronautic research in Europe and the needs of a laboratory at the Institute

The last meeting of the Alumni Council was held at the University Club, December 18. After dinner President Fay spoke of the coming meeting of the Technology Clubs Associated in Chicago, and suggested that the Council, acting for the Boston alumni, should take action with reference to attendance from New England. William H. King, '94, president of the Technology Clubs Associated, who was called upon, told of the energy which the men of the Northwestern Association in Chicago were putting into plans for the convention, which is to be held in Chicago, February 20 and 21. Probably there will be opportunities for departments and classes to get together. The smoker will be held in the large dining room of the University Club, which is one of the most beautiful rooms of its kind in the country. The grand banquet will be held at the Blackstone, Chicago's leading hotel, which is designated as the reunion headquarters.

President King announced that "boosting" committees were being appointed in every local association to promote attendance at the reunion, and to arrange for transportation. In Chicago a "booster" was appointed for every class, and in some of the larger alumni centers there will also be separate class boosters. As the class secretaries are largely located in Boston, they can act as boosters here. On the New York boosting committee is Mr. George W. Kittredge, '77, of the New York Central, to look out for transportation.

Mr. King made a strong appeal for a generous attendance from the East, stating that undoubtedly arrangements could be made so that special cars could be run from New York and Boston to meet at Albany, and that Tech men could be picked up along the line of the New York Central to Buffalo. At Albany or Buffalo the train could go as a "special" or as a second section to the regular train. Cars from Cleveland and other cities near the road could be taken on, and it is possible to send a very large train load into Chicago.

After Mr. King's talk there was a short discussion of the arrangements to be made in Boston, and it was moved that a boosting committee of five be appointed by the chair,—one member of the committee to have charge of transportation arrangements. The committee appointed by the president consists of I. W. Litchfield, '85, Henry J. Horn, '88, Russell Robb, '88, Arthur H. Alley, '91, and J. Linfield Damon, '91. It is hoped that at least two carloads will go from Boston, and the New York men expect to take two carloads from New York.

Benjamin Hurd, '96, of New York, told about the New York dinner to be held January 17, which is to be in the nature of a testimonial to President Maclaurin.

In introducing Lieut. Jerome C. Hunsaker, President Fay spoke of the part that the Alumni Council had taken in advancing the study of aëronautics at the Institute. Over three years ago a committee was appointed to investigate the matter and to make such recommendations as might seem best with reference to a course of study here. Largely as a result of that investigation lectures on this subject were arranged for, which are now being carried on at the Institute.

At the request of the authorities, Lieutenant Hunsaker, a graduate of the U. S. Naval Academy and also of Technology, '12, was detailed by the United States government to serve here; and last spring he went abroad to study the conditions in Europe with reference to a suggested course in aërodynamics at the Institute.

Much of the interest in Lieutenant Hunsaker's report on the proposed courses in aërodynamics lay in the review of the situation in Europe. He notes that the enormous public interest that, till recently, filled all the aërodromes whenever there was a flight, has in a measure passed and the people are beginning to say, "Of what use is it?" "Commercially," said the speaker, "on account of unreliability, small carrying capacity and expense, the aëroplane has found no real field. From the point of view of the sportsman, the airship is too costly and the aëroplane too dangerous to have a large following. The flying-boat may have a chance at popularity. The naval and military interest in aircraft contrasts strongly with the skepticism of the great mass of the people. It is true that the development in the building of them has been almost wholly due to the moral and financial encouragement of the great military powers. Although America gave the world the first practical

aëroplane, it is most probable that the lack of development on this side of the water is due to the fact that the possible enemies of the country lie beyond the probable radius of action of such aircraft. Nevertheless, with vulnerable outposts at Panama and the Philippines and the nearer-at-hand problems in Mexico, there is an awakening interest in military and naval circles.

The aëroplane, according to European opinions, is suited for scouting operations in which the flight and return may be made during daylight, which means within a radius of 150 miles. It is necessary for the machine to return to report under present conditions of wireless telegraphy. The airship fills in the gaps of night scouting and long-distance work. It can report by wireless; its action may be up to four hundred miles, and at the Panama Canal, for example, it could cover the approaches 85 days out of one hundred.

Supplying aircraft is a recognized industry in France and Germany, and the former is to have one thousand aëroplanes in service as soon as possible and fifteen hundred aviators. The Farman factory has an output of one aëroplane a day. In England the Royal manufactory employs 750 men, while Germany is very active. These facts explain the forwardness of the industry abroad.

One result has been the improvement of methods and gradual growth of knowledge. Flying is safer than it was a year ago, and infinitely safer than four years ago. Structural failures, formerly the rule, are now the exceptions, and in other ways the results of the research laboratory are patent.

In England research is carried on most actively at the National Physical Laboratory on models and at the Royal Air-Craft Factory on full-sized machines. Practically unlimited funds are available. At Northampton Institute in London, evening courses are given in aëronautical engineering, and the school has a wind tunnel. In France, the foremost civil engineer, M. Gustav Eiffel, has retired from his profession and is devoting the remainder of his life to aëronautical research. His private laboratory has the most powerful wind tunnel in the world, with a six-foot side and a wind current of eighty miles an hour. The army maintains an experimental laboratory at Chalois-Meudon and the University of Paris has an extensive laboratory at St. Cyr, where there is a tunnel, and whirling table for models and a dynamometer car for full-sized

aëroplanes. The École Supersieure Aëronautique has been founded to educate engineers in the work, and here courses are given by the most eminent specialists in France.

In Germany the University of Göttingen has an aëronautical laboratory to which only candidates for the doctor's degree are admitted as research assistants. The Technical High School at Berlin and also that at Aachen have courses in aëronautics and have laboratories. Further, the German Society of Engineers maintains a very complete laboratory at Aldershof near Berlin.

From all this it is evident that in the United States it is only a question of a little time when aërial navigation will present problems to the engineer. It is the function of our foremost engineering school to supply the technically trained men when they are required. The well-equipped mechanical and naval engineers may be called upon in the near future to handle aëronautical problems. It is in preparation for just such a call that the Massachusetts Institute of Technology has announced its courses in aërodynamics.

Local Alumni Luncheons

The Southwestern Technology Association of Birmingham, Alabama, at the Turnverein, Saturdays at 1.00 p. m.

The Northwestern Association, Chicago, meets every Thursday at the Grand Pacific at 12:30.

Buffalo has a luncheon at the Buffalo Chamber of Commerce on the first Thursday of every month at 12.30 p. m.

The Cincinnati M. I. T. Club convenes in the main dining-room of the Bismarck, Mercantile Library Building, Tuesdays, from 12.30 to 2.00 p. m.

In Denver, the Rocky Mountain Technology Club has a biweekly luncheon at Daniel's and Fisher's restaurant.

The Technology Club of Southern California meets at the University, Los Angeles, on the first Wednesday noon of every month.

The San Francisco members of the Technology Association of Northern California have luncheon at Jules Café on Tuesdays.

In Seattle the Technology Club of Puget Sound have a luncheon on the third Monday of each month at 12.15, corner of Third avenue and Jefferson street.

INTERESTING FIGURES OF REGISTRATION

Among the new men registered every third man comes from another college—One hundred and twelve colleges represented—One hundred and thirteen from foreign countries.

The registration figures for 1913–14 show strong advances everywhere. The total number of men registered at the Institute is 1,685; last year there were 1,611. The total number of new men is 635. Of these new men 415 are in the freshman class. The total number of men at the Institute who have attended another college before coming here is 479 or 22.4 per cent. of the entire registration. The total number of new students from other colleges is 202, or 31.8 per cent. of the new men registered. The total number of graduates from other colleges enrolled at the Institute is 245, or 14.5 per cent. of the total registration. The total number on the teaching staff at the Institute is 272, which allows one instructor to every 6.7 men. There are 40 candidates for advanced degrees, and there are 11 women students.

The percentage of men from Massachusetts in the freshman class is 60.7. The percentage of men from Massachusetts in the entire school is 55.5.

There are 112 colleges represented here. The list of colleges represented and the number of men from each is as follows: University of Alabama, University, Ala., 2; Alabama Polytechnic Institute, Auburn, Ala., 1; Allegheny College, Meadville, Pa., 1; Amherst College, Amherst, Mass., 7; Baldwin University, Berea, Ohio, 1; Bates College, Lewiston, Me., 3; Baylor University, Waco, Texas, 1; Beloit College, Beloit, Wis., 3; Boston College, Boston, Mass., 2; Boston University, Boston, Mass., 2; Bowdoin College, Brunswick, Me., 4; Brown University, Providence, R. I., 4; Bucknell University, Lewisburg, Pa., 1; California College, Oakland, Cal., 1; College of Charleston, Charleston, S. C., 1; University of Chicago, Chicago, Ill., 1; College of the City of New York, New York City, 1; Clark College, Worcester, Mass., 4; Clemson Agricultural College, Clemson College P. O., S. C., 1; Colby College, Waterville, Me., 2; Colgate University, Hamilton, N. Y., 1; Columbia University, New York City, 2; Brighton University, Omaha,

Neb., 1; Dalhousie University, Halifax, Nova Scotia, 1; Dartmouth College, Hanover, N. H., 7; Denison University, Grandville, Ohio, 2; Drake University, Des Moines, Iowa, 1; Franklin and Marshall College, Lancaster, Pa., 1; Furman University, Greenville, S. C., 1; Georgetown University, Washington, D. C., 2; University of Georgia, Athens, Ga., 1; Georgia School of Technology, Atlanta, Ga., 2; Gonzaga College, Spokane, Wash., 1; Hamilton College, Clinton, N. Y., 3; Hamline University, St. Paul, Minn., 1; Harvard University, Cambridge, Mass., 11; Highland Park College, Des Moines, Iowa, 1; Hobart College, Geneva, N. Y., 1; Holy Cross College, Worcester, Mass., 3; University of Illinois, Urbana, Ill., 2; Iowa State College, Ames, Iowa, 1; Johns Hopkins University, Baltimore, Md., 3; Lafayette College, Easton, Pa., 1; University of Maine, Orono, Me., 1; University of Michigan, Ann Arbor, Mich., 6; Middlebury College, Middlebury, Vt., 3; University of Minnesota, Minneapolis, Minn., 1; Mississippi Agricultural and Mechanical College, Agricultural College P. O., Miss., 2; University of Montana, Missoula, Mont., 1; University of Nebraska, Lincoln, Neb., 1; University of New Mexico, Albuquerque, N. M., 1; New York University, New York City, 3; University of North Carolina, Chapel Hill, N. C., 2; North Dakota Agricultural College, Fargo, N. D., 1; Northwestern University, Evanston, Ill., 1; Oberlin College, Oberlin, Ohio, 3; Occidental College, Los Angeles, Cal., 2; Ogden College, Bowling Green, Ky., 1; Oklahoma Agricultural and Mechanical College, Stillwater, Okla., 1; University of Oregon, Eugene, Ore., 1; Park College, 1; Pennsylvania Military College, Chester, Pa., 1; University of Pennsylvania, Philadelphia, Pa., 1; Princeton University, Princeton, N. J., 6; Purdue University, La Fayette, Ind., 3; Radcliffe College, Cambridge, Mass., 1; Saint John's College, Annapolis, Md., 2; Saint Mary's College, Kansas, 1; Saint Olaf College, Northfield, Minn., 1; Simpson College Indianola, Iowa, 2; Smith College, Northampton, Mass., 2; South Carolina Military Academy, Charleston, S. C., 2; University of Southern California, Los Angeles, Cal., 1; Southwestern University, Georgetown, Texas, 1; Spring Hill College, Mobile, Ala., 4; Syracuse University, Syracuse, N. Y., 1; University of Tennessee, Knoxville, Tenn., 1; University of Texas, Austin, Texas, 3; Texas Agricultural and Mechanical College, College Station, Texas, 1; Union College, 1; United States Military Academy, West Point, N. Y., 1; United States Naval Academy, Annapolis, Md., 8;

Ursinus College, Collegeville, Pa., 1; University of Vermont, Burlington, Vt., 1; University of Virginia, Charlottesville, Va., 1; Virginia Polytechnic Institute, Blacksburg, Va., 1; Washington and Jefferson College, Washington, Pa., 1; Washington and Lee University, Lexington, Va., 1; Whitman College, Walla Walla, Wash., 1; Williams College, Williamstown, Mass., 11; College of William and Mary, Williamsburg, Va., 1; University of Wisconsin, Madison, Wis., 2; University of Wooster, Wooster, Ohio, 2; Worcester Polytechnic Institute, Worcester, Mass., 1; Yale University, New Haven, Conn., 8.

Foreign colleges and universities represented: Anhui Provincial College, China, 2; Central Turkey, 1; University of Chile, Santiago, Chile, 1; Chi-li Provincial, China, 1; Chinese Naval College, Nanking, China, 4; University of France, France, 1; Institute of Havana, Cuba, 2; Imperial Polytechnic College, Shanghai, China, 8; Japanese Naval Engineering College, Tokyo, Japan, 1; Kiang Nan Provincial, China, 1; McGill University, Montreal, 1; National University, Paraguay, 1; Presidency College, Calcutta, 1; Royal Technology, Copenhagen, Denmark, 1; Syrian Protestant College, Beirut, Syria, 3; Toronto University, Canada, 1; Wuchang Provincial College, China, 1.

The number of foreigners at the Institute is larger than ever. The registration this year shows 113 men from foreign countries, or 6½ per cent. of the entire registration.

The countries represented are as follows: Austria-Hungary, 1; Brazil, 7; Canada, 14; Chile, 1; China, 42; Colombia, 1; Costa Rica, 1; Cuba, 7; Denmark, 2; Ecuador, 1; Egypt, 1; France, 4; Germany, 2; Greece, 1; Guatemala, 1; Honduras, 1; India, 1; Japan, 1; Mexico, 7; Newfoundland, 1; Paraguay, 1; Peru, 2; Portugal, 1; Russia, 4; Salvador, 1; Scotland, 1; South African Republic, 1; Syria, 2; Turkey, 3.

Technology Gets Bequest of $25,000

By the will of Seth K. Sweetser, late of Brookline, which was filed last month in the registry at Dedham, the Institute of Technology receives a bequest of $25,000, which is to be added to the permanent fund. The testator also bequeathed $25,000 to the Kindergarten for the Blind, an equal sum to the American Unitarian Association and to the Museum of Fine Arts.

LOCAL ALUMNI ACTIVITIES

Increasing interest in the Rochester Club—High Jinks at the Cleveland meeting—New club to be formed at Indianapolis—Bridgeport Tech men get together—Annual banquet of Southwestern Association—Other news

TECHNOLOGY CLUB OF ROCHESTER.—The annual meeting of the Technology Club of Rochester was held on Monday, October 27, 1913, at the Hotel Rochester. The following men were present: W. E. Hoyt, '68; A. S. Crocker, '97; J. F. Ancona, '03; J. H. Haste, '96; M. H. Eisenhart, '07; H. O. Stewart, '09; A. F. Sulzer, '01; F. A. Cole, '91; W. G. Burt, '05; H. H. Tozier, '96; C. C. Culver, '96; D. E. Russ, '07; W. G. Wilder, '01; F. B. Saegmuller, '11; B. C. Hopeman, '01; C. E. Meulendyke, '10; W. S. Lucey, '07; Russell Mack, '13; J. J. Hynes, Jr., '13; F. C. Tayler; J. H. Woods, '13; R. B. Jeffers, '10; H. E. Akerly, '10; F. L. Myers, '03.

Following an excellent dinner, which was arranged for by M. H. Eisenhart, '07; and W. S. Lucey, '07; a business meeting was held. The secretary-treasurer announced that all bills had been paid and that the treasury had a good balance. A report was made, outlining the work of the executive committee in getting belated contributions to the Alumni Fund.

The election of officers for the ensuing year was as follows: President W. E. Hoyt, '68; first vice-president, F. W. Lovejoy, '94; second vice-president, A. S. Crocker, '97; secretary-treasurer, J. F. Ancona, '03. A spirited contest on a second ballot for a three-year member of the executive committee was required on account of a tie vote; Mr. C. C. Culver, '96, won by a narrow margin. A general and animated discussion was entered into under the head of unfinished business, relative to guiding students of a high order toward the Institute. President Hoyt announced in a short address, that another large donation had been made to the Institute by "Mr. Smith." Adjournment followed.

While the REVIEW articles relative to the Rochester Club have been infrequent during the past year, the interest of the members

is still as great, if not greater, than it has ever been. A brief outline of items of more or less interest is stated below:

Last winter Mr. Everett Morss, '85, stopped off in Rochester and met several of the club members and talked to them in a very interesting manner of Institute affairs.

During the mid-year period of 1913, Mr. J. R. Freeman, '76, and his sons, all Tech men, passed through Rochester and spent an afternoon and evening. F. W. Lovejoy, J. H. Haste, H. O. Stewart and J. F. Ancona had an enjoyable time in meeting Mr. Freeman and sons, and greatly appreciated the opportunity of seeing some prints of Mr. Freeman's studies concerning the New Technology and having him explain and discuss the same.

On May 7 a dinner was held at the Oak Hill Country Club, after which Mr. Lovejoy explained, for the benefit of the club members, Mr. Freeman's treatment of the New Technology. Singing, pool, billiards, bowling and trips to a certain small basement room consumed the remainder of the evening.

The club was able to obtain Mr. Freeman's slides which were exhibited at the New York City meeting, and these were shown to an audience of about thirty, at the Kodak Parks Works of the Eastman Kodak Company, through the courtesy of officials one evening about May 15. The club had as a guest Mr. J. B. Duffy, Harvard, '03, chairman of the Rochester School Board.

The secretary-treasurer was honored by a request from Dr. Maclaurin to represent the Institute as a delegate to the inauguration of Dr. Lyman P. Powell, as president of Hobart College, Geneva, N. Y., on November 14 and 15. In accordance with this he participated in the various ceremonies and festivities, and, although these were formal, even elaborate, he had a very good time.—*John F. Ancona, '03, Secretary-Treasurer, 190 Birr Street, Rochester, N. Y.*

Technology Club of Northern Ohio.—Technology men, sixty-six strong, gathered at the Cleveland Athletic Club on December 13, for the annual Christmas Fun Festival of the Technology Club of Northern Ohio. President F. A. Smythe, '90, acted as toastmaster. Dunlap's Sympathy Quartette, consisting of Joe Dunlap, '11, Phil Kerr, '11, Harry Alexander, '11, and Jack Tuttle, '10, with Charlie Haynes, '04, at the piano, rendered music especially composed for the occasion. Among the most popular of the songs

on the program was one entitled "Old Tot Strickland," dedicated to W. R. Strickland, '98, chief engineer of the Peerless Motor Car Company. A large assortment of additions to the regular Technology limericks were rendered.

A particularly good inspiration was the third verse to the now famous song "Take Me Back to Tech." This verse, which the Technology Club of Northern Ohio has offered the Institute authorities for inclusion in the new edition of the song book is as follows:

Mᴀ**S**ꜱ**A**ᴄ**H**–ᴜ**S**ᴇ**T**ᴛ**S**
Iɴ**S**ᴛ**I**ᴛ**U**–ᴛ**E**ᴏ**F**ᴛ**E**
Cʜ**N**ᴏ**L**ᴏ and **Y** comes after **G**
Massachusetts Institute
Of Tech — Technology

The speakers for the evening were J. E. Hale, '08, of the Goodyear Tire & Rubber Company, E. B. Rowe, '06, of the Holophane Company, who spoke of recent developments in the lighting industry, George Merryweather, '96, who gave a particularly interesting illustrated talk on industrial Germany with slides from pictures which were taken during the recent visit of the American Society of Mechanical Engineers, R. W. Pratt, '98, sanitary engineer of the city of Cleveland, who spoke on sanitation in Cleveland, and R. A. D. Preston, '10, pilot of the balloon *Akron*, which won the recent international balloon race, who described the many interesting features of this trip. In addition Mr. F. R. A. Walker, '01, described in detail the design of the New Technology. Copies of the recent special issue of *The Tech* containing pictures of the new buildings were distributed to all.

The club maintained its high record for originality and good fun with the staging of a special Santa Claus event. Santa Claus, consisting of George Glover, '08, behind a very large stomach and very long whiskers and inside of a proverbial Santa Claus costume, rode into the banquet room seated on an enormous elephant of which Bill Jenkins, '09, was the front end and Allen Gould,'10, the rear end, to the accompaniment of a violent confetti snowstorm and uproarious melody of "Jingle, Jingle, Oh, You Silvery Bells." Ray Ferris, '08, with his bald head and mustache, dressed as a five-year-old infant, and it might be added acting like one,

added to the humor of the situation. Immediately upon dismounting from Jumbo, Santa Claus Glover offered $5,000 to any member of the organization who would ride the beast for three minutes. Jack Tuttle, '10, peeled off his coat and essayed the stunt but failed to receive the money owing to the fact that after two minutes and thirty seconds of enthusiastic struggling the elephant came apart in the middle when the front and hind legs insisted on moving in opposite directions. This unexpected lack of team work left Jack in the middle of the floor.

Santa Claus had an appropriate gift for each and every member present. A. D. Hatfield, '96, who had requested a charm to induce men to take out proper life insurance, was presented with an ax. Stanley Motch, '99, treasurer of the Motch & Merryweather Company, was presented with a two-foot key to keep George Merryweather out of the treasury. L. E. Williams, '02, who wanted a six months' vacation in Canada, was presented with a rope to tie the bull, and B. Darrow, '11, who asked for a pleasant evening, was given a "September Morn." The prize gift was for Armen Tashjian, '08, who had asked for "A peach of a blonde." The blonde was personified by the secretary in pink tights, ballet skirt, and low cut bodice.

A telegram of best wishes from the Pittsburgh association, which was meeting in Pittsburgh on the same night, was received and a reply was sent by long distance telephone.

The Northern Ohio organization is planning to send a large delegation to the meeting of the Technology Clubs Associated which is to be held in Chicago in February and is preparing for a record breaking spring banquet.

All Technology men located in this vicinity or visiting are earnestly requested to communicate with the secretary and join in the large spirit of good fellowship, good fun, and great enthusiasm for Technology.—*D. R. Stevens*, '11, *Secretary, Peerless Motor Car Company, Cleveland, Ohio.*

Technology Club of The Merrimack Valley.—The fourth annual field day of the club was held on the afternoon and evening of Wednesday, October 29 at the Merrimack Valley Country Club, Lawrence. During the afternoon the members enjoyed all the privileges of the golf course, tennis courts, bowling alleys, pool rooms, etc. At 6.30 p. m. a business meeting was held. Election

of officers for 1913–1914 (postponed from February) took place with results as follows:

President, George C. Dempsey, '88, Lowell; vice-president, George W. Hamblet, '88, Lawrence; treasurer, William O. Hildreth, '87, Lowell; secretary, John A. Collins, Jr., '97, Lawrence; member executive committee, C. W. Eames, '97, Lawrence; representative to Alumni Council, John C. Chase, '74, Derry Village.

Dinner was served at 7.30 p. m. to thirty-one members. Retiring President Ivan L. Sjoström, '88, of Lawrence presided at the succeeding exercises and presented as the speaker of the evening Dr. William H. Walker, director of the research laboratory of applied chemistry at the Institute. Dr. Walker traced the development of the research laboratory, described its workings, and told of the work already done or outlined for the future, in investigating and solving practical problems of applied chemistry and chemical engineering which are coming up daily in the numerous chemical and engineering works of the country. He also exhibited plans showing the lay-out of the New Technology, already under way, and gave his audience an excellent idea of the magnitude and admirable arrangement of the different departments.

F. H. Silsbee, II, '74, died in North Andover on December 16, 1913. Mr. Silsbee was the first president of the Merrimack Valley club, and was very active in bringing about the organization in 1901. For many years he was superintendent of the cotton department of the Pacific Mills, Lawrence.—*John A. Collins, Jr., '97, Secretary, 67 Thorndyke Street, Lawrence, Mass.*

The Cincinnati M. I. T. Club.—One of the first items of interest in the fall season of this local club was the arrival of twins (assorted) to Mr. and Mrs. Clifford B. Woodward, '03, on October 1, which adds to the future membership of the firm of Garber & Woodward.

On October 23, about twenty-five of the local alumni, including, Hildabolt, '75, of Germantown, met together at one of Cincinnati's famous German gardens for a beefsteak dinner. This was an extra meeting for the fall and we hope to be able to work up a series of these informal dinners throughout the year to give those who are unable to attend the regular weekly lunches a better opportunity to become acquainted with the new men who are constantly joining us.

After the dinner we adjourned to some nearby bowling alleys and proceeded to display our abilities in Tech's own game. We had three teams, the Omega Oilers: (Strong, '11, capt.), Morse, '03, Pugh, '97, Van Hook,'06, Folsom, '08, and Brotherton, '73.

Crooks: Kruckemegert, '11 (capt.), Willey, '08, Batsuer, '10 Dixon, '06, Karnan, '08, and Rew, '09.

Criscos: Allen, '10, (capt.), Manley, '00, Miller, '02, Hargrave, '12, Andrew, '01, and Hildabolt, '75.

Some very fair games were rolled, though nothing very exciting. Captain Allen of the Criscos bowled the high individual total for the three games of 424 pins. The total team points were as follows:

Crooks	2070
Criscos	1960
Omega Oilers	1929

It is needless to say that some of the fellows reported lame shoulders for some days to come as a good many do not average two evenings of bowling a year. Nevertheless, the evening was voted a huge success and, as before mentioned, plans are in process for repetitions.

Just at present we are all wondering how great changes are in store for those of the Tech men who are connected with the municipal administration; for, as has been heralded throughout the country, the voters of this city have chosen to return the Republican party with the so-called Cox machine to power and the change will undoubtedly remove a number of our men who are not under Civil Service classification.

In the recently held Second Municipal Budget Exhibition the work of Tech men was very evident in the engineering and sewage departments, which departments, by the way, receive first prize over all other city departments for clearness and completeness of its display.

Although unable to make necessary arrangements with the local newspapers in regard to the publication of the matters of Tech's new location, the individual members have been most interested in going over them and find it hard to realize the immensity of the whole proposition.

We have just learned that there is some possibility of F. W. Garber, '03, making a several months' study trip to Europe on which

he hopes to renew his acquaintance with the masterpieces of European architecture. Merrell, '88, is receiving congratulations on the election of his brother to the bench of the Superior Court which is a high and rather unique court dealing with city affairs and business cases.

Let us again remind all Tech men who visit Cincinnati that we expect to see them at our regular lunch on Tuesdays.—*Stuart R. Miller, '07, Secretary, 3366 Morrison Avenue, Clifton, Cincinnati, Ohio.*

INTERMOUNTAIN TECHNOLOGY ASSOCIATION.—On Saturday evening, November 1, the Intermountain Technology Association held an informal stag evening at the Orpheum Theatre and the Hotel Utah in Salt Lake City, Utah.

About a dozen of the local alumni met in the lobby of the Orpheum Theatre and from there went in a body to the two boxes which had been reserved for them.

From the theatre adjournment was taken to the Hotel Utah where reservations had been made for a Dutch lunch. Here the management had provided room with table and piano. Cold meats with salads and sandwiches as well as beer were available. There was plenty of singing and calls for the pianist were frequent and hearty. Fortunately, the young man who played was a college man from the University of Nebraska. He was able to enter into the spirit of the occasion, recognized the sort of swing needed in the songs and contributed in no small measure to the success of the evening. There seemed to be prevalent throughout the group present a feeling of good comradeship and the belief that the evening had been very pleasant and decidedly worth while.

Those present were: Lewis T. Cannon, '96, O. H. Gray, '97, W. T. Cannon, '99, C. S. McDonald, '99, E. H. Callahan, '01, B. W. Mendenhall, '02, J. T. Gilmer, '05, V. S. Rood, '07, Gregory M. Dexter, '08, W. L. Whittemore, '06, G. S. Humphreys, '10, and M. Elliott, '10.—*Gregory M. Dexter, '08, Secretary-Treasurer, Box 195, Salt Lake City, Utah.*

SOUTHWESTERN ASSOCIATION OF M. I. T.—The Southwestern Association held its annual banquet and election of officers on Saturday night, November 29, here in Kansas City at the Hotel Kupper. We started in with the Stein song and wound up with

a regular old "We are happy." Every man present had a good time and left the banquet feeling pretty chesty over being Tech men. Hermann Henrici, '06, L. G. Blodgett, '06, and Robert S. Beard, '05, are the president, vice-president, and secretary, respectively, for the coming year. An assistant to the secretary, and publicity and membership committees, were appointed. We decided to make an especial effort this year to entertain prominent Tech men visiting this territory and to have them speak before the local high schools, where we would back them up with a good showing of our local alumni.

Those attending our annual banquet were G. R. Jones, '08; E. M. Price, '08; Hermann C. Henrici, '06; L. G. Wilson, '04; H. T. Mulhall, '97; Robert S. Beard, '05; H. L. Havens, '09; Frank Cushman, Jr., '01; G. N. Wheat, '04; C. J. Skinner, '98; L. G. Blodgett, '06; A. S. Keene, '98; and G. M. Holbrook, '00.—*Robert S. Geard, '05, Secretary, 53 Waterworks Building, Kansas City, Mo.*

The Kansas City Alumni Association of the Massachusetts Institute of Technology is working for funds for a students' clubhouse on the institution's new grounds at Cambridge, Mass. The alumni chapters throughout the country have raised about $500,000 toward the new club house.

Massachusetts Institute of Technology is erecting a $10,000,000 building at Cambridge, which will house all of the departments, and combine all of the classrooms and executive offices of the institution.

Members of the local alumni association include C. L. Simpson, president of the Kansas City Real Estate Exchange, and H. H. Adams, president of the Kansas City Terminal Company. Mr. Simpson is one of the oldest alumni in Kansas City.—*Kansas City Journal.*

Technology Club of Buffalo.—Members of the Buffalo Society of Alumni of the Massachusetts Institute of Technology were entertained at dinner last evening by the faculty of Canisius College in the Main Street building, after which they inspected the new college building and laboratories and viewed a series of lantern slides showing the New Technology Institute buildings shown by Rev. M. J. Ahern of the Canisius faculty.—*Buffalo Commercial, December 16.*

INDIANAPOLIS ALUMNI.—Meetings were held yesterday by the local alumni of the Massachusetts Institute of Technology, looking to the formation of a Technology club here. Robert H. Richards, professor of mining engineering at the Boston school, was in the city and took part. A noon luncheon was held at the University Club, followed by an evening meeting at the Claypool Hotel.

C. A. Tripp was chosen secretary and steps were taken to effect a permanent organization. There are twenty-three "Tech" men in the city, with as many more in nearby towns.

Those present at the meetings, in addition to Professor Richards and Secretary Tripp, were: I. L. Wayne, C. P. Lockwood, A. R. Holliday, H. B. Shields, Wilson B. Parker and A. L. Stickney.—*Indianapolis News, December 5.*

BRIDGEPORT ALUMNI—The alumni and undergraduates of the Massachusetts Institute of Technology who are in this city will have a dinner this evening at Lehman's. A feature of the programme will be an exchange of experience of their business careers. Those at the dinner will be: C. B. Blanchard, 1891, H. S. Hunt, 1910, W. A. Kinsman, 1899, G. M. MacDonald, 1903, J. A. McElroy, 1907, H. R. Philbrick, 1906, H. T. Smith, 1898, G. B. Thomas, 1905, H. L. Stone, 1914, U. H. Flemmings, 1915, E. E. Polley, 1915, J. A. Stagg, 1917, N. L. Waterman, 1913, P. W. Dalrymple, 1912, H. R. Danffect, 1915, John Dier, 1910.—*Bridgeport Standard, December 26.*

Back up Chicago

The big convention of Technology clubs in Chicago is an important event in our Alumni history. We have undertaken to show the people of that city what we can do in the way of numbers and enthusiasm. Chicago is a strategic point for Institute men and it is important that the clans should be present in force. Back up the Northwestern Association; back it up strong. Make your plans to be there.

PROGRESS ON THE NEW BUILDINGS

Good progress has been made in the development of the architectural and structural plans for the new buildings by the Stone & Webster Engineering Corporation.

Preliminary elevations of the typical portions of the buildings forming the sides of the main and minor courts and the floor layouts for these units have been practically completed.

The footing and piling plans have been completed for four of the units and the actual work of pile driving is now well under way.

General studies are being made of the lighting, plumbing, heating drainage and structural layouts and it is expected a definite decision will be reached in regard to these matters in the course of the next few weeks.

To provide proper construction facilities for a building of this size, a large number of temporary buildings and storage bins are required and several thousand feet of temporary track must be provided. With the exception of the temporary track all work of a temporary nature has been completed and it is expected that the railroad company will commence construction on the spur from the Boston & Albany Railroad in a few days.

At the present time approximately 31,000 cubic yards of excavation have been removed, amounting to 75 per cent. of the total and 44,000 cubic yards of the fill of the main court placed, which practically completes this division of the work. Trenches have been opened for the wall footings for those buildings that form the sides of the main and minor courts and two pile drivers are engaged in driving piling for the foundations to be placed in these excavations. At the present time more than 1,000 piles have been driven. As the development of the plans permit, additional drivers will be placed on the work which will be pushed as rapidly as possible.

In addition to the 2,000 barrels of cement, which were received some time ago, there is now on the job for construction purposes, approximately 300,000 feet of lumber for forms, 1,040 tons of reinforcing steel, 120 cubic yards of gravel and approximately 100 cubic yards of sand. Tests which have shown satisfactory results have been made of the cement, sand and reinforcing steel.

THE CROSS-COUNTRY TEAM

The cross-country season at the Institute opened with an outlook none too bright, as the loss of seasoned material by graduation removed four of the seven members of the previous year's team. Competition for their places, however, was very keen, and the result was a well-balanced team having much promise.

The first contest was with the Boston Athletic Association, and was a close one. Technology won by the score of 23 to 33. On Field Day, November 7, the dual run with Holy Cross resulted in an overwhelming defeat for our opponents by the score of 23 points to 67. The first five members of the Technology team crossed the finish line before a Holy Cross runner scored. It was apparent that the team was the fastest ever representing the Institute; but in the New England Inter-Collegiate Association championships, held by Dartmouth College at Hanover, the Institute finished fourth out of the eight college teams contesting. This result, although disappointing, was felt to be due to the unexpected severity of the course rather than to the inferiority of the cross-country material; and on the following Saturday in the championship run of the Inter-Collegiate Association of Amateur Athletes of America, Technology came in third in a field where all the larger colleges of the East were represented. Cornell finished first with a score of 68, and Harvard second with 92 points, Technology taking third place with 103 points. Good authorities consider that our team work was equal to that of Cornell and superior to all others. The teams defeated were such worthy competitors as the University of Pennsylvania, Princeton, Yale, Michigan, Dartmouth, Syracuse, Brown, Columbia, Pennsylvania State and the College of the City of New York.

During their stay in New York the team was entertained most hospitably by the Technology Club of New York at the club house, 17 Gramercy Park. The most satisfactory feature of the meet was the attendance of a great many of the alumni, the largest delegation that has ever encouraged a Technology team away from home. The encouragement that the team received in this way played no small part in the result. The cheering rivaled the organized cheering of Cornell, so famous in these events.

TECH MEN IN THE PUBLIC EYE

GEORGE E. HALE, '90, director of the Mount Wilson Solar Observatory of the Carnegie Institution of Washington, has been elected an honorary fellow of the Royal Society of Edinburgh.

J. RANDOLPH COOLIDGE, JR., '92, was recently elected president of the Boston Chamber of Commerce, succeeding James J. Storrow. Mr. Coolidge is a fellow of the American Institute of Architects, a member of the Boston Society of Architects and one of the Beaux Arts architects. He is a trustee of the Boston Athenæum and of the Museum of Fine Arts.

JOHN L. MAURAN, '89, of St. Louis, Mo., was recently elected treasurer of the American Society of Architects.

HENRY M. WAITE, '90, formerly chief engineer of the city of Cincinnati, has just been made business manager of the city of Dayton, Ohio. Dayton has planned for city government along advanced lines, and following the lead of a few other cities in the country, has decided to appoint a general manager to run its business instead of electing the usual municipal officers who have no special training for the places they are called to occupy. It is understood that the position was offered to Colonel Goethals who was unable to accept.

Before becoming city engineer of Cincinnati Mr. Waite was vice-president of the Clitchfield Coal Company. He was appointed chief engineer under the reform administration of Mayor Hunt of Cincinnati, and his record while there attracted the attention of the Dayton authorities.

ROBERT N. TURNER, '05, a lawyer of Boston, was last month selected by the State Board of Labor and Industries to be commissioner of labor for Massachusetts. Mr. Turner served on the Waltham (Mass.) board of aldermen one term, and has been a member of the House of Representatives. During the last two years he has been legislative counsel for the Boston Chamber of Commerce and for the Massachusetts branch of the American Association for Labor Legislation.

JUDSON D. DICKERMAN, '95, formerly chief gas tester of the city of Chicago, has been appointed chief of the Bureau of Gas, Philadelphia, by Director Cooke of the Department of Public Works. Mr. Dickerman succeeds Dr. Hollis Godfrey, '98, who was recently made president of the Drexel Institute.

BRADLEY STOUGHTON, '96, was made secretary of the American Institute of Mining Engineers during the past year. Before coming to the Institute he was a graduate of the Sheffield Scientific School, Yale University, and after leaving Technology, he became connected with a number of steel companies. He was for some time instructor in metallurgy at Columbia, and later he became professor in the same institution. Since 1908 he has been engaged in consulting work in New York.

ARTHUR C. WILLARD, '04, formerly sanitary and heating engineer for the United States War Department has been made assistant professor of heating and ventilation of the College of Engineering of the University of Illinois.

W. Cameron Forbes elected to the Corporation

At the meeting of the Corporation of the Institute held December 29 Hon. W. Cameron Forbes of Milton, Mass., was elected to life membership in the place of Mr. J. B. Sewall, deceased.

Mr. Forbes is a graduate of Harvard in the class of 1892. In 1897 he became connected with the firm of Stone & Webster, and remained with them until 1902. He has been a partner in the firm of J. M. Forbes & Co. since 1899. From 1904–08 he was a member of the Philippine Commission, and secretary of commerce and police in the government of the Philippine Islands. He was made vice-governor in 1908 and the next year was appointed governor-general.

The family has been identified with the interests of the Institute from its early days. J. M. Forbes was a warm friend of President William Barton Rogers, and one of Technology's benefactors. William H. Forbes was made a member of the Corporation in 1893. The accession of Mr. Forbes to the Corporation of the Institute adds material strength to that body, and the appointment will be heartily endorsed by the alumni generally.

MISCELLANEOUS CLIPPINGS

Technology-on-the-Charles

The Charles is coming to its own again, in time—the new "White City" for the Institute of Technology makes the river its "Court of Honor." It would be a nice question to balance and decide—whether the Institute gains the more from the river or the river from the Institute; it is one case where both sides gain and give. Never does fine architecture show for more than when seen across a wide stretch of water, as witness Venice—on the other hand, nothing gives interest and beauty to the view over a lake or harbor like towers and palaces, as witness the matchless impression of majesty, power, and human solidarity to take one's breath away, when New York harbor meets the eye, at the Narrows, with the grouped sky-scrapers looming mistily in the distance, like some vision in a dream of castles in Spain across twenty-five square miles of water. Nothing to compare with the new "Tech" transpontine site, for a college-buildings frontage, occurs to mind, save Columbia's splendid position on University Heights with the metropolis at its feet and gleams of the water on either side and far away, as though sea and sky and the world of men were all embraced in its province, as indeed they are.—*Boston Transcript.*

A Lesson from Boston

On another page may be found drawings of the new buildings soon to be erected on the bank of the Charles River in Cambridge by the Massachusetts Institute of Technology. It will be observed that a comparatively small plot of ground is made to care for a large institution, without crowding and without a sacrifice of architectural beauty. This plan, indeed, promises to make one of the handsomest groups in the country. As an example of what can be done on a limited amount of land it may become a classic.

At the left of the main Tech group is a piece of ground about as large as the principal campus. This will be devoted to physical culture and the housing of a large number of students in dormitories. In their study of the problems confronting them the authorities of the University of Nebraska find a strong movement everywhere toward the dormitory method of caring for the students. Nothing promises to counteract the subtle social poison of the fraternity system more effectually than the gathering of the lower classmen in large groups where they may breathe the air of democracy, where friendships are formed on a natural basis, and where any little cliques that may be formed will not be rendered permanent by ironclad organizations.—*The Nebraska State Journal.*

Industrial Research

In view of the evidence offered by Germany of the far-reaching benefits resulting from the close coöperation which there obtains between the university laboratory and the industrial plant, it must be admitted with regret that our own institutions of learning have, speaking generally, failed to seize or realize the great opportunity confronting them. They have, almost universally, neglected to provide adequate equipment for industrial research, and, which is more to be deplored, since the first would otherwise quickly follow, have rarely acquired that close touch with industry essential for familiarity and appreciation of its immediate and pressing needs. There are happily some notable exceptions.

Perhaps foremost among them stands the Massachusetts Institute of Technology with its superb engineering and testing equipment, its research laboratory of applied chemistry and the meritorious thesis work of its students in all departments. The biological department has been especially active and successful in extending its influence into industrial and sanitary fields, while unusual significance attaches to the motor vehicle studies just concluded and the more recently inaugurated special investigations in electricity, since both were initiated and supported by external interests. About two years ago the Institute brought vividly before the community the variety and extent of its widespread service to industry by holding a Congress of Technology, at which all of the many papers presented recorded the achievements of the Institute alumni.

The Colorado School of Mines, recognizing that $100,000,000 a year is lost through inefficient methods of ore treatment, has recently equipped an experimental ore dressing and metallurgical plant in which problems of treatment applicable to ores of wide occurrence will be investigated. The Ohio State University has established an enviable reputation for its researches in fuel engineering. Cornell has been especially alive to the scientific needs of industrial practice, and a long experience with technical assistants enables me to say that I have found none better equipped to cope with the miscellaneous problems of industrial research than the graduates of Cornell. It may be in fact stated generally that the quality of advanced chemical training now afforded in this country is on a par with the best obtainable in Germany, and that home-trained American youth adapt themselves far more efficiently to the requirements and conditions of our industries than do all but the most exceptional German doctors of philosophy who find employment here.

Several of the great universities of the Middle West, notably Wisconsin and Illinois, have placed themselves closely in touch with the industrial and other needs of the community and are exerting a fundamental and growing influence upon affairs. In the East, Columbia has recently established a particularly well-equipped laboratory for industrial chemistry and is broadening its work in this department.

The Universities of Kansas and of Pittsburgh are carrying forward an especially interesting experiment in the operation of Industrial Research Fellowships supported by the special interests directly concerned. These fellowships endow workers for the attack of such diverse subjects as the chemistry of laundering, the chemistry of bread and baking, that of lime, cement and vegetable ivory, the extractive principles from the ductless glands of whales, the abatement of smoke nuisance, the technology of glass, and many others. The results obtained are intended primarily for the benefit of the supporters of the individual fellowships but may be published after three years. The holder of the fellowships receives a proportion of the financial benefits resulting from the research, and the scale of sums allotted has progressively risen from $500 a year to $2,500 and even to $5,000. While some doubt may reasonably be expressed as to the possibility of close individual supervision of so many widely varying projects the results obtained thus far seem entirely satisfactory to those behind the movement.

Research in the textile industries has been greatly stimulated by the various textile schools throughout the country, of which the Lowell Textile School with its superb equipment is perhaps best known. The fermentation industries have been brought upon a scientific basis largely through the efforts of the Wahl-Henius Institute at Chicago and other special schools.

There is no school of papermaking in the country and one of our most urgent industrial needs is the establishment of special schools in this and other industries for the adequate training of foremen who shall possess a sufficient knowledge of fundamental scientific principles and method to appreciate the helpfulness of technical research. The Pratt Institute at Brooklyn has shaped its courses admirably to meet this demand.—From Presidential Address of Arthur D. Little, '85, before the American Chemical Society.

Freshman Temporary Chairman

We heartily approve the plan which is being suggested for eliminating the "sight unseen" choice of the freshman temporary chairman. The idea is to have the Institute Committee, at the end of each year, elect a junior to preside over the next incoming class until Field Day, when the regular elections can take place.

There is no doubt that the present system leaves much to be desired. The selection becomes in part a "beauty contest," the men being lined up on the platform for inspection, and in part a competition in silver-tongued oratory on the part of the friends of the candidates. We think neither branch is conducive to securing the best men. The fact that excellent officers have been elected in this way is no argument for the system.

On the other side it may be urged that each class should be absolutely self-governing. While not denying the excellence of this principle, we think its abrogation for a few short weeks advisable, considering the great practical advantages to be obtained.

The Institute Committee would have, on which to base their choice, two whole years' record of the men considered, which is ample to insure a good selection. This would also eliminate the unfair advantage in the contest for the permanent offices, which now falls to the men selected by the beauty-and-oratory competition.—*The Tech.*

New York Club House

That No. 17 Gramercy Park South, owned by Mrs. Mary Gerard, the wife of Justice James W. Gerard, and occupied by the Technology Club, is to continue in the possession of the alumni of the Massachusetts Institute of Technology is indicated by the preparations being made to renovate and enlarge the premises, which it has been supposed were to be vacated in favor of a site near the Grand Central terminal on which it was reported an option had been obtained with the idea of erecting a modern club house.

The club holds the Gramercy Park house under a lease having some fifteen years to run, with a privilege of renewal, and it is to be remodeled at a cost of $15,000, from plans prepared by Oswald C. Hering, '97, and Douglass Fitch, architects. The Columbia University Club House, at the southwest corner of Irving Place, adjoins the Gerard property.—*New York Herald.*

Minor Athletics

One of the leading college dailies of the country expresses editorially its regret that the intensity of undergraduate emphasis on the five major sports is resulting in a lack of candidates and spirit for teams on which a man cannot earn his "clean letter." It is complained that at this season of the year, when the most stimulus is needed to make the ordinary student interest himself in physical exercise, and when a great variety of minor sports are most profitably engaged in, the men neglect them to a deplorable extent.

No such condition prevails at Tech. Our lack of the all-important varsity teams which represent so many of the great universities serves to diffuse athletic interest into channels dictated rather by the choice and aptitude of the individual than by the iron force of tradition, and leaves in our athletic endeavors that democratic spirit which, although not conducive to the production of little tin-god athletic celebrities, is yet of much consequence in a school where physical training remains a means instead of an end. At the Institute the meanest freshman receives the same careful training, if he will but take advantage of his opportunities, as the wearer of the T. It is not pretended that this system develops championship teams,—although we have never been the laughing-stock of other

colleges,—but it has never been the ambition of the Institute to have its graduates noted primarily for their athletic achievements.—*The Tech.*

Aerodynamics

A course in the mechanics of air navigation, which it is proposed to establish at the Massachusetts Institute of Technology, should be productive of good results. It is high time to apply hard, scientific study to the problem of flying. The aëronautical engineer is a necessity before there can be real progress in travel through the air. Too many lives have been sacrificed already in the attempt to develop flying either as a sport or as an exhibition feature. In reporting on the subject to the Alumni Council, Lieut. Jerome C. Hunsaker, United States Navy, who is assigned to the Institute, directs attention to the fact that the real advance in the knowledge of flight has come from skilled engineers. In guidance, he says, the requirements are for a chauffeur, but in the creation of the machines scientifically trained men are necessary.

The proposed course might not prove of great advantage in earning one's bread and butter until flying is made less hazardous than at present. However, the conquest of the air is a mighty fascinating subject, and the course would probably prove attractive for reasons other than those of bread winning.—*Boston Herald.*

The word "Tech" has a country-wide reputation for the close application required from her students, and it is only merit that wins her diplomas.—*Cincinnati Enquirer,* April 17, 1913.

The Massachusetts Institute of Technology has recently received anonymous gifts totaling $3,150,000, the only case on record where the anonymous letter writer has ever scored a hit.—*Denver Times.*

May Tech continue to enjoy the confidence of the mysterious "Mr. Smith" and all his family.—*Boston Journal.*

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BOOK REVIEWS

MINERAL DEPOSITS. By Waldemar Lindgren, Professor of Economic Geology, Massachusetts Institute of Technology; Geologist, United States Geological Survey. XXV + 883 pages. Illustrated. Published by McGraw-Hill Book Company, Inc., New York, August, 1913.

This work on "Mineral Deposits" by Prof. Lindgren is the first consistent treatment of the subject of economic geology from the genetic viewpoint. As the author states in the preface, "This book is the outcome of a desire to place the knowledge of mineral deposits on the broader and more comprehensive basis of a consistent genetic classification and thus bring it into a more worthy position as an important branch of geology."

Economic geology, while a specialized branch of the science, is governed by the same principles that control all geologic processes. In economic geology, certain specialized processes act to produce unusual effects, and the emphasis laid on these processes in describing ore deposits tends to make the beginner in economic geology look on it as something to be considered apart from what he has already learned of the science. This is not the case; the same principles apply in the formation of mineral deposits that hold for the more general geologic processes, and this important truth is emphasized in the book under consideration. Prof. Lindgren has searched out the ultimate causes of things, in so far as present day methods of research enable one to do so, and the result is that the complex geologic bodies made use of by man are arranged in a logical scheme according to their origin, as consistently as may be with a natural system so inter- and gradationally related as are these deposits. This treatment of the subject brings it into line with other branches of the science, so that a student, instead of learning that copper is formed in several different ways, all more or less unrelated, finds that given certain conditions, not only copper, but lead, silver, iron, etc., will also form in the same general type of deposit. This develops an attitude of mind in the beginner most valuable in obtaining a grasp of the subject, and a knowledge of it that he can apply when necessary.

The first chapter is introductory, and takes up definitions, composition of the earth's crust, traces of metals in rocks, tenor of various ores, etc.

Chapter II considers the deposition of minerals and how it is brought about.

Chapters III to VI, inclusive, treat of underground water, on which considerable stress in thus laid. The flow of underground waters; their composition as affected by the various terranes through which they pass; the chemical work done by them; relations of mineral deposits to different zones; and the origin of underground water, and the materials contained in them, are all treated in an interesting and authoritative manner.

In Chapter VII spring deposits at the surface are considered, while Chapter VIII treats of the relations of mineral deposits to mineral springs.

Folding and faulting are taken up in Chapter IX, while the important subject of openings in rocks is carefully considered in Chapter X.

The form, structure and texture of mineral deposits is treated in the well-illustrated Chapter XI, which, with Chapter XII, on Ore Shoots, is valuable to the student for the definitions they give.

In Chapter XIII the most radical feature of the book is introduced, the classification of mineral deposits, and the following fourteen chapters, up to Chapter XXVII, inclusive, treat of various types of deposits according to this scheme.

In brief, the new classification has two major divisions, the first, those deposits formed by mechanical processes of concentration; second, those formed by chemical processes, this latter containing by far the greater number of deposits. The three main subdivisions of the latter class comprise first, deposits formed in surface waters; second, in bodies of rocks, and third, in magmas by processes of differentiation. The second type is, of course, the most important, and its further subdivision treats of those deposits formed by concentration of substances contained in the geologic body itself, and by concentration effected by introduction of substances foreign to the rock; both of these being still further subdivided.

Each of the different classes and subdivisions is illustrated by one or more typical deposits.

Chapter XXVIII is concerned with metamorphosed deposits; Chapter XXIX takes up the oxidation of metallic ores, exemplified by numerous examples, and is a valuable summary of the subject; while Chapter XXX, the closing one, gives some data on the calculation of rock analyses.

The book is very readable, and one is impressed by the wealth of information it contains. The wide experience of the author with the varied mining camps of many countries in both hemispheres, but especially with those of the United States, enables him to write with a first hand knowledge of his facts, and his own wide field experience gives the power of weighing and coördinating data gained by others in a masterly manner. The guiding classification scheme, in connection with the index, which might be more detailed to advantage, enables one to readily find the information sought, though a chapter treating of the various types of deposit in which a given metal is found would be of assistance to those interested in one metal alone.

The great number of references deserves mention; also the well-chosen illustrations, clearly and properly selected to illustrate and not merely embellish. The book is well printed and the number of pages, nearly 900, is surprising in a volume of this size. It is bound in dark red cloth, with gilt lettering, and is uniform with Richards's "Ore Dressing," Hofman's "General Metallurgy," and other comprehensive works by Institute men issued by the same publishers.

J. D. MacKenzie, '11.

Design of Plate Girders. By Lewis E. Moore, '02, Associate Professor of Structural Engineering, Massachusetts Institute of Technology. Cloth, 6 x 9¼ in.; 285 pages; 82 illustrations; 40 tables. New York: McGraw-Hill Book Company, Inc. $3 net.

In line with the demands of more scientific design in general the plate-girder has come in for its portion of the newer critical analysis, and in some cases the older, hard-and-fast methods of design have had to yield to more precise ones. The ordinary approximate rules have a distinct limitation to their accurate application, and only imperfectly apply to some cases and not at all to others. For example, the error in applying the so-called "effective-depth" method to heavy shallow girder design is considerable, while all long-span girders with unlike top and bottom

flanges (of unsymmetrical cross-section relative to the neutral axis) can not be solved at all by rougher methods. The present volume recognizes the need for a more adequate treatment of the plate-girder—that most common and useful of all bridge types—and it is not a matter of surprise that the author has found material enough to dedicate an entire volume of 285 pages to its development. The book is in no sense a descriptive one, but is at all times actively concerned with the principles of design and their application to actual examples. The author states in his preface that the book has been written to explain clearly and in detail the reasons underlying designing, showing the assumptions made, and giving, so far as possible, various methods, with an indication of which is the best one in each case.

The subject of stresses has been condensed into one chapter, but the author finds space to tell practically all that is necessary for plate-girder design. The treatment is simple and clear and covers uniform and rolling loads, influence lines, wheel-load criteria and the use of the moment table. Chapter 2 gives a short and careful discussion of the efficiency of riveted joints. Chapter 3 develops the theory of the plate girder. An interesting feature of this chapter is the ingeniously simple relationships worked out between deflection, depth and fiber stress for all possible kinds of loading. These very simple formulæ permit one to determine the depth of beam required to keep the ratio of deflection to span length down to any predetermined amount, or to determine the allowable fiber stress for any given depth and deflection. In Chapter 4 the principles of design are now applied in complete detail to the design of a 45-foot through span for E50 loading and the New York New Haven & Hartford Railroad specifications of 1912. Chapter 5 contains a similar complete design of a 70-foot deck girder for E60 loading, while Chapter 6 takes up the box girder. Here, even more than in the larger types of the preceding chapters, the necessity for precise methods is apparent. The proper location of the neutral axis and the computation of the moment of inertia and fiber stresses, whether for gross or net area of cross-section, or gross above and net below the neutral axis, are discussed, and the design of a typical three-webbed box girder of 19-foot span with a 445,000-lb. center load is worked out by all three methods and the results compared. The reviewer regrets that the author did not add one more chapter to include the design of a heavy, long-span girder with unsymmetrical flanges, a type quite popular with some railroads and imperative for very long spans, and which admirably illustrates all of the more complex features of precise plate-girder design.

Chapter 7 has been written by Mr. John C. Moses, engineer of construction of the Boston Bridge Works, and is entitled "Shop Hints for Structural Draftsmen." He discusses at length the economic relation of the draftsman to the template, pattern, blacksmith and bridge shops, and to the erector, describing shop methods and the limitation of the tools, and the necessity for the draftsman to plan his work with reference to the needs of the shop and erection department, while at the same time carrying out the intentions of the designing engineer. He states, with justice, that such a man "may rightfully feel that he is an engineer and not a mere mechanic."

The general specifications for steel railroad bridges of the New York, New Haven & Hartford Railroad, 1912, are given in full, followed by forty tables intended to lighten the work of the designer. These pertain mainly to web, cover-plate and angle areas, moments of inertia for flange angles and cover plates for various girder

depths, diagrams for stiffener spacing by several well-known formulæ, bearing the shearing values of rivets for all units varying by thousand pounds, and other useful tables.

The book is intended mainly as a text-book for students, but the older engineer will find much in it to interest him. As a text-book it is a distinct addition to engineering literature and will be welcomed by instructors. The author's style is clear and interesting and he displays good judgment in the choice of his material and the manner of its presentation. While rather emphasizing exact and scientific methods of design, a good balance is at all times maintained between theoretical considerations and practical necessity.

The typographical work is excellent throughout and, for a first edition, there are few typographical errors. FRANK H. CONSTANT in *Engineering Record.*

ELEMENTS OF WATER BACTERIOLOGY, with Special Reference to Sanitary Water Analysis. By Samuel Cate Prescott, '94 Associate Professor of Industrial Microbiology in the Massachusetts Institute of Technology, and Charles-Edward Amory Winslow, '98, Associate Professor of Biology, College of the City of New York, and Curator of Public Health, American Museum of Natural History, New York. Cloth, 5½ x 8¼ in.; 318 pages. New York: John Wiley & Sons, Inc. $1.75.

The new edition of this book will be welcomed by all those who are familiar with former editions. It is without question the most useful work on the subject, and thoroughly represents present American practice.

The book has been entirely rewritten and is much larger than former editions. The authors take vigorous exception to some of the recent recommendations of the committee on standard methods of water analysis of the American Public Health Association, especially those which relate to the substitution of the 37-degree agar count for the 20-degree gelatin count, and to the tests recommended for the identification of B. coli. They take the position that bacterial counts should be made by both methods and that the fermentation of lactose bile, or lactose broth, is a sufficiently practical test for the presence of intestinal bacteria.

The book contains numerous abstracts from recent literature on the subject, arranged in an excellent manner for convenient study. Among the new chapters in the book is one on the sanitary study of shellfish.—GEORGE C. WHIPPLE, '89, in *Engineering Record.*

HOUSE SANITATION. By Marion Talbot, '88. Boston: Whitcomb & Barrows. 1913.

In view of the rapidly growing conviction that home-making is a science as well as an art, and the increasing purposefulness with which women are preparing themselves for this function, there is no more important need in public health than for authoritative manuals of home sanitation. It was one of the most substantial achievements of the late Mrs. Richards that she saw the need before it was generally recognized and met it by the preparation of a series of books which will always remain as inspiring models for workers in this field. Public health science has developed with such rapidity, however, that every few years makes necessary a revision of the older viewpoints. The reviewer has of late frequently been puzzled when asked to recommend a good book on home sanitation. The Sanitary Science

Club of the Association of Collegiate Alumnæ, under the guidance of Mrs. Richards herself, published a book upon this subject twenty-five years ago. It has naturally become in many respects out of date; and the new work just published by one of Mrs. Richards's most distinguished pupils has been so completely rewritten as to constitute an entirely new contribution, and one which shows that the mantle of the pioneer in scientific home-making has fallen on no unworthy shoulders.

It is, indeed, refreshing, to one familiar with the ordinary type of pseudo-sanitation contained in current literature for the housewife, to find that Dean Talbot in her first chapter quotes as a text Dr. H. W. Hill's statement that "The old sanitation was concerned with the environment, the new is concerned with the individual and finds the sources of infectious disease in man himself rather than in his surroundings." The following principles of "the new sanitation" immediately follow as illustrations which "show changes in sanitary theory which have been abundantly and conclusively proved."

"Night air is purer than day air, and should be admitted freely to the house.

"Gases from marshes do not cause malaria.

"The quality of the air in the breathing zone is more important than the general air of the room.

"The quantity of carbon dioxide or 'carbonic acid' is not a measure of the unhealthfulness of air.

"Ordinary variations in the normal gaseous constituents of air produce no apparent effects.

"High humidity, combined with high temperature, produces the discomfort ordinarily attributed to 'bad air,' and is unhealthful.

"Ordinary buildings and rooms ventilate themselves to a considerable extent. A small house needs comparatively less provision for change of air than a large building.

"Air from properly constructed sewers is not harmful.

"Sunlight can not be depended on for disinfection or as a substitute for cleanliness. Its value is physiological, psychical, and chiefly moral.

"Actual light rather than window area should be the measure of the efficiency of room-lighting.

"Odors are not harmful physically, but when unpleasant should be eliminated by cleansing methods rather than by ventilation.

"Disinfection as ordinarily practised, especially by amateurs, is practically valueless."

These brief statements, which so well present some of the chief conclusions of recent public health science, almost constitute a syllabus of the book. They are elaborated in eight chapters, dealing with the situation of the House and Care of the Cellar, Plumbing, Air and Ventilation, Heating, Lighting and Light, Furnishing, The Country House and Household Control of Infection, and each chapter is followed by some twenty direct practical questions intended to focus the attention of the housewife on the immediate problems of her own dwelling which fall under the general subject discussed. The viewpoint is throughout thoroughly sound and up-to-date and this little book of 116 pages ought to do notable service in the cause of public health education.—C.-E. A. Winslow, '98, in *Science*.

STEEL RAILS. By William H. Sellew, '97, Principal Assistant Engineer, Michigan Central Railroad. 524 pages, 361 illustrations, 33 folding plates 4to, New York: D. Van Nostrand Company $12.50 net.

In volume under review, as stated in the preface—"the author has endeavored to systematize the knowledge in existence upon the subject, and to present in a concise yet clear form the most important features of the problem."

The first chapter takes up the development of the rail section. It begins with the early forms and traces their evolution into the present forms. As the book treats of "steel rails" the early wrought iron rails are only touched upon. The early forms of rails and the service obtained from them are presented in detail with discussion of the elements entering into the gradual change of shape of section. A table showing the number of rail failures per 10,000 tons laid for a certain period of time is given and many photographs of broken rails are reproduced. The steady increase in wheel loads is shown by a diagram and the effect of this increase upon the rail is discussed, and the "recommended practice" of the American Railway Association is given in detail. The sections used abroad are shown and discussed briefly.

Chapter II takes up the pressure of the wheel on the rail and opens under the subhead, "Speeds of Modern Locomotives." The requirements and possibilities of speed are discussed and a severely condensed table of the fast and unusual runs of the last thirty years is given. The idea is presented that the primary reason for strengthening track was on account of frequency of traffic rather than increase in wheel loads. Tables of weights and photographs of numerous locomotives, together with diagrams of the variations in pressure between the wheels and the rail at various speeds, follow. Formulas for calculating these pressures are also given. A photograph showing how a badly balanced locomotive may damage track is also included. The effect of irregularities in the track, flat wheels, and rocking of the engine in varying these pressures is discussed, and the results of experiments are given. Possible lack of roundness of car-wheels is also illustrated. The methods used in making tests to determine pressure and the results derived therefrom are given in detail. The effect of the height of the center of gravity above the rail is also discussed in connection with the various types of electric locomotives. Photographs and tables of weights of various types of cars close this chapter.

Chapter III takes up the supports of the rail beginning with the ties. Various forms of steel ties are described and illustrated. The concrete tie is also illustrated. The distribution and cost of wooden ties, methods of preserving, effect of preservative treatment, fastening of rail to tie, tie-plates, etc., are discussed. The application of actuarial methods to the management of a forest, after the method of Faustmann, is treated in some detail, with special reference to tie production. The size and spacing of ties as practiced on various roads is also given. Photographs showing injury to ties caused by spikes are also given, together with dimensioned drawings of the various forms of screw spikes. The stresses in ties are also taken up, together with the distribution of pressure on the ballast, subgrade, and, in fact, upon the whole track substructure. The chapter closes with the deflection of the rails under load.

Chapter IV takes up the stresses in the rail. It begins with those at the point of contact between the wheel and the rail and discusses various theories and the experiments which have been made to determine both the area of contact between

the wheel and the rail, and the stresses resulting therefrom in the rail. The wear of ties and slipping of wheels is also treated at length. The change in structure of the head of the rail due to the continuous cold rolling by the wheels is commented upon. The stresses due to deflection under the wheels, elasticity of roadbed, spacing of ties, etc., comes next. The results of direct measurements of fibre stress in different portions of the rails are also given in detail. Methods of computing shears and moments in rails, and tests on joints close the chapter.

Chapter V takes up the strength of the rail and treats of its structure, the effect of impurities and the influence of stress upon it. Magnified photographs showing the rail composition and the effects of stress on the rail structure are given. Methods of making physical tests and their results follow, special attention being paid to drop-tests. A complete set of specifications and general drawings of a drop-testing machine are given, together with a comparison of the old and the new types or drop-testing machines and the results obtained from them. The relations between deflection and time are also discussed. Illustrations and descriptions of scleroscopes for determining hardness of rails are given. Detailed results of tests of specimens cut from different portions of the rail follow with discussion. The weight of rail required to distribute various wheel loads is treated theoretically and discussed.

Chapter VI takes up the influence of detail of manufacture and the causes, principally economic, which have led to the production of inferior rails. There is, as the author points out, room for difference of opinion as to whether inferior rails or increased loads are responsible for the large number of rail breakages. Sections illustrating the ways in which rails wear are given. There is a discussion of the effects of various elements upon the rail, and a statement of the qualities which are desirable. The effect of the rates of cooling, time of soaking, rapidity of rolling, number of passes, heat treatment, etc., are all given in detail. The whole process of manufacture is described in detail with regard to the effect of variations in methods upon the quality of the rail. Cuts of lake ore steamers, loading docks, unloading devices, lay-outs of plants, blast furnaces, hot-blast stoves, etc., are given, together with details of converters, open hearth and electric furnaces. The effect of pipes, etc., in ingots is traced to the finished rail and their effect illustrated.

Chapter VII gives rail specifications in detail, with detailed explanation and discussions.

An appendix gives the forms which have been found useful for reports and records of all sorts and kinds in connection with rails.

A large number of plates giving rail sections, details of fastenings, spikes, etc., etc., close the volume.

The book, although frankly almost altogether a compilation, is nevertheless a monumental one. The discussions are résumés of the best points raised in technical society discussions of the subject combined with comments from the author's extensive experience. Very complete bibliographies are given. In brief, the work is a compendium of the present day knowledge of the subject with extensive and complete bibliographies and discussions and should prove valuable to one whose business or interests require a thorough knowledge of steel rails.

L. E. Moore, '02.

PRINCIPLES OF IRRIGATION ENGINEERING. By F. H. Newell, '85, Director, U. S. Reclamation Service, and D. W. Murphy, Engineer in Charge of Drainage, U. S. Reclamation Service. Cloth, 6½ x 9⅜ in.; 293 pp.; 54 figures and 63 photographs. New York: McGraw-Hill Book Compai y. $3 net.

When it is realized that hardly more than one-fifth of the total land surface of the earth is humid the importance of irrigation is readily appreciated. The growth of the human race has made urgent the necessity for reclaiming parts of the arid and semi-arid regions and developing them so that they will be fit for human habitation. Records as far back as 2250 B. C. indicate that irrigation projects were in operation, thus reclamation by means of irrigation is nothing new. But, as with everything else, irrigation engineering has kept abreast of the progress of the world and today projects are in operation where the methods used in storing and conserving the water have reached, so far as present engineering knowledge is concerned, their final stage of engineering refinement.

In this country the United States Reclamation Service has planned and built extensive irrigation projects, and it is, therefore, important that engineers in general become familiar with these undertakings and the considerations governing their design. The authors of the book, both occupying positions of high responsibility in the Reclamation Service, have given the engineering profession something of real value.

As the work is limited to one volume, all elementary subjects, such as flow of water, etc., have been excluded and only a broad survey of the principles of irrigation engineering is given, in as simple and concise a form as possible. The subject-matter has also been arranged so that even persons without a thorough technical knowledge of hydraulics may read it with profit.

The book is divided into nineteen chapters—irrigation; irrigable lands; water supply; design and construction of canals; canal structures; distribution systems; irrigation by pumping; drainage; operation and maintenance; storage works; reservoir sites; dam sites; timber dams; earth dams; rock-fill dams; masonry dams; outlet works; water rights, and economic features of irrigation.

The text is well written and the illustrations serve their purpose admirably. It is to be recommended to engineers and students desiring a broad view of the principles involved in considering planning, constructing and operating irrigation systems.—*Engineering Record.*

An ingenious and useful diagram from which simple beam problems can be solved direct has been worked out by H. R. Thayer, '98, assistant professor of structural design at Carnegie Institute of Technology. The diagram and directions for its use are on a 9 x 12-inch sheet of stiff paper. The various systems of intersecting lines indicate spans, loads, moments, unit stresses and section moduli, and are readily followed. (New York, D. Van Nostrand Company. 20 cents.)—*Engineering Record.*

NEWS FROM THE CLASSES

1868.

ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

In November the secretary took a trip, making Indianapolis the objective point. His first thought upon arrival was to ferret out some Tech men but he soon discovered there were no means of getting on their trail. He, therefore, wired home for a *Register of Former Students*, and to the alumni office for recent publication bearing upon the ever-interesting subject of the new buildings. The *Register* listed twenty-three men in Indianapolis. After communication with these men a luncheon was arranged at the University Club. At this meeting the men present were: Alex. R. Holliday, '99, secretary of the National Concrete Company; Chas. P. Rockwood, '01, assistant secretary of the Rockwood Mfg. Company; Chas. A. Tripp, '93, consulting engineer, McMeans & Tripp; Wm. G. Wall, '96, chief engineer, National Motor Vehicle Company; J. L. Wayne, '96, traffic superintendent, Central Union Telephone Company. The men were told of the splendid work President Maclaurin was doing, aided by the Corporation and alumni, and they were all enthusiastic over the good news. In fact, the interest finally became so intense that a new association was formed and the secretary of '68 was given the office of honorary president with J. L. Wayne as secretary.

In the evening two more men dined with the secretary at the Claypool Hotel: Wilson B. Parker, '89, architect, and Frank B. Shields, '07, vice-president and manager of the National Process Company.

When the secretary took the train to return he was met at the station by Frederick S. Hollis, '90, assistant professor of organic and physical chemistry and toxicology, of the Indiana University of Medicine, and Severance Burrage, '92, of the Eli Lilly Company.

Several other men, unfortunately absent from the city, were unable to be at either of the meetings.

1870.

CHARLES R. CROSS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Stephen C. Earle, dean of Worcester architects, designer of many of the most prominent buildings in the city and leader of the local chapter of the American Institute of Architects, died at the Memorial Hospital, December 12, after a week's illness from pneumonia.

Mr. Earle was born in Leicester, January 4, 1837, a lineal descendant of one of the Pilgrims. He received his education at the district school in Leicester, the Friends' School in Providence, the Worcester High School and the Institute.

MAURICE B. PATCH, '72

He continued his studies in Boston and New York up to 1862, when he enlisted in the Fifty-first Massachusetts Regiment. Following his mustering out at the close of the war he worked on the Hoosac tunnel as a draughtsman and then studied for seven months in Europe.

In 1866 he returned to Worcester, where he had since lived. He designed, among other buildings, the Public Library, the Worcester Art Museum, All Saints' Episcopal Church, St. Matthews' Episcopal Church, Union Congregational Church, South Unitarian Memorial Church, St. Mark's and the Worcester Polytechnic Institute. Four children survive him.

1872.

C. FRANK ALLEN, *Sec.*, Mass. Inst. of Tech., Boston.

Maurice Byron Patch, who died December 3, was born at Otisfield, Mass., June 8, 1852. His early education was received at the public schools of Lowell, from which he entered the Institute in 1868. Of the seventy-six members enrolled in the class in the first year, he was one of nine to receive his degree with the class of 1872, successfully completing his course just before his twentieth birthday. At the close of his junior year in 1871, he was one of a number of mining students, who formed the first party from the Institute to take an extended tour through the country, this one reaching as far as Colorado. Possibly as a result of this, Patch, soon after graduation, accepted a position in Georgetown, Col., as a young mining engineer and surveyor in the office of a Mr. Johnson. After two years of good experience in this field he became connected with the Detroit and Lake Superior Copper Smelting Company, at Hancock, Mich., serving as assayer, chemist, and assistant superintendent. It was there that he laid the foundation for his far-reaching and accurate knowledge relating to the metallurgy and smelting of copper, which became his life work. He found opportunity also for research work, some of the results of which he was able to put to use where it had immediate practical importance.

In 1886 he went to Lake Linden, Mich., to design and superintend the erection of the smelter plant of the Calumet & Hecla Mining Company, remaining there as superintendent. His service for them was so satisfactory that five years later he went to Buffalo to construct for the same people the Buffalo smelter, an important part of the works of the Calumet & Hecla Company. He continued as superintendent and successfully operated the plant until his death, a period of more than twenty years.

While still engaged in this work, he became interested in the Lumen Bearing Company. This with Patch as adviser, and under the direct management of his son-in-law, has developed into one of the most important brass foundries in the country, where the

composition of a brass is determined upon a scientific basis so as to adapt the product to the special use for which it is intended.

Maurice B. Patch's business activities were not limited to these industries. While in Michigan, he had assisted in the organization of the Superior Savings Bank at Hancock, and of the First National Bank of Lake Linden; and became a director in each of these. Later he was a director of the Niagara Bank of Buffalo.

In 1907 he was appointed a member of the important grade crossing commission of Buffalo, and early in 1912 became its chairman. In this work he impressed his associates with a sense of his fine business ability, as well as a large fund of common sense, to which was added a devotion to the public welfare. These qualities depended in part upon his college and his business training, and in part upon sterling character which had always been a part of his equipment. He is reputed to have made an excellent chairman, falling neither into the error of allowing business to drift, nor of suppressing useful discussion. His associates in the commission paid tribute to his memory "as a man of much force of character, and of marked executive ability" and stated "he made his personality felt in every question brought before this commission, and his influence had much to do in selecting the plans adopted by it."

A Buffalo business man, who had dealt on a large scale with him for many years, found him a fine man to trade with; he both invited and demanded fair dealing and with little detail even in large transactions. He was for many years a member of the Buffalo Club where he was well known and well liked.

Maurice Patch was an enthusiastic Tech man. He had been from the beginning one of the most active and most prominent men in the Technology Club of Buffalo. As senior member of the executive committee of the Club, it was his frequent function to preside at their reunions. He was elected by his class as its first representative on the Council of the Alumni Association, and was once selected as a nominee for term member of the Corporation of the Institute.

Those who knew Patch as a student remember him as a frank and open-hearted boy; as a man he retained many of the traits which were prominent in the boy; he was direct, sometimes to the point of bluntness, but kind-hearted nevertheless. His bluff, hearty personality made him in late years a special favorite among his classmates and no class reunion seemed quite complete without him.

For many years past he had been a sufferer from rheumatism. An attack of acute indigestion on Thanksgiving morning was followed a day later by a stroke of paralysis. He died December 3, 1913, at the home of his daughter at Derby, a few miles away from Buffalo, and is buried in the family lot in the cemetery near by.

The class secretary was present at the funeral in Buffalo, and at the burial in Derby.

Maurice B. Patch married in 1875 Miss Emily Isabella White of Lowell, Mass., who survives him, as do three sons, Nathaniel K. B. Patch, Maurice B. Patch, Jr., Howard R. Patch; also two

married daughters, Mrs. Emily P. Barr, Mrs. Ethel Phippen; and a grandson, Maurice B. Patch, 3d.

1874.

CHARLES F. READ, *Sec.*, Old State House, Boston, Mass.

William F. Halsall, on December 3–14, exhibited pictures of the sea at Copley Hall. The masterpiece of his paintings was "Our Glory—Battleship Oregon."

Francis H. Silsbee, formerly superintendent of the cotton department in the Pacific Mills, died December 18, after a short illness at his home, 360 Andover Street, North Andover. He was 61 years of age and was born in Salem, Mass. Death was due to acute indigestion.

Mr. Silsbee entered the employ of the cotton department of the Pacific Mills in 1881. In 1887 he was advanced to the position of superintendent, where he remained till about three years ago. Since 1900, he had been a trustee of the Lawrence Savings bank. He attended the Unitarian church, North Andover.

He is survived by his wife; a son, Francis B. Silsbee of Washington, D. C., and a sister, Elizabeth Silsbee of Salem.

In a recent number of *Business America* there appears a short sketch of Samuel P. Colt, '74, which will interest members of his class. It is as follows:

"One of the greatest and most interesting of the large manufacturing companies in this country is the United States Rubber Company. It may not be a trust, but it is a pretty big combination, and does things in rather the old-fashioned, lordly way of the great aggregations of capital. Samuel Pomeroy Colt is president of this hundred-million-dollar affair, and while he does not qualify as an expert rubber man, there is very little he does not know about rubber companies.

"The United States Rubber Company always manages to keep in the public eye. It is usually engaged in some manner of large financial operation, and not a few of these operations have been more or less complicated. Recently the directors again decided to increase the capital stock by a large amount, $9,422,000 of first preferred stock this time, and voted to offer this stock at par to existing stockholders. Now this first preferred pays 8 per cent dividends and has sold as high as 116 within a couple of years. But with the news of the new stock issue it promptly fell to about 99, thus wiping out any 'rights' or profits to shareholders, in buying it from the company at 100.

"But Colt is not a man to be dismayed by a little drop in the stock market. He is a man of great ability and resource, and while the financial methods of the United States Rubber have not gone without criticism, nor all the many, many purchases of its directors for the company, yet Colt deserves credit for building up such a great and powerful organization.

"Colt is sixty-one years old, a man of attractive personality and one who enjoys life. He studied for three years at the Massachusetts Institute of Technology, but decided to become a lawyer, and in Rhode Island. In time he became assistant attorney-general of that snug little state, and then attorney-general. Previously he had served as a member of the General Assembly. Probably all this political experience was not without help in his future work.

"He founded the Industrial Trust Company of Providence, quite the largest and most powerful banking institution in Rhode Island, with about $55,000,000 of resources. Colt first served as president and then as chairman of the board. On one occasion there were rumors of a tremendous internal row, and opposing parties had quite a fight, but Colt appears to have won out in the end. After forming this great institution Colt was chosen to head the United States Rubber Company, a combination of many smaller concerns. He had no unusual expert knowledge of rubber, but he has had the executive ability to manage this company, and has always come out on top of every issue.

"The subject of this sketch has served on a governor's staff in Rhode Island, so he has the rank of colonel. He has a brother, United States Senator Le Baron Colt, a former circuit judge, and Colonel Colt himself is said to have had a little ambition in the United States senatorial line. A son of Colonel Colt, Russell, married Ethel Barrymore, the actress, and is a partner in the big brokerage firm of H. L. Horton & Company. A few years ago Colonel Colt was reported to be quite ill, but his many friends were later relieved to find that he had recovered."

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

George F. Swain has been appointed on a commission to consider the abolition of grade crossings at Middlesex Street and Western Avenue, Lowell, Mass. The problem at Middlesex Street is very difficult on account of its situation and has been under consideration for many years. The other members of the commission are Patrick H. Cooney of Natick, formerly district attorney of Middlesex County, and Nelson P. Brown, former city solicitor of Everett and assistant in the district attorney's office.

Mr. and Mrs. George W. Kittredge received the congratulations of friends on the occasion of the silver anniversary of their wedding, October 17, 1913, at Yonkers, N. Y. They have a son in his sophomore year at the Institute.

1882.

WALTER BRADLEE SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

David McClure, who was once connected with the class is now located at Soquel, Santa Cruz County, Cal.—The address of

Herman H. Duker is now University Parkway and Oak Street, Baltimore, Md.—Charles D. Jenkins is residing at 59 North Street, Newtonville, Mass.

1884.

HARRY W. TYLER, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The *New York Herald* dated November 9, and headed Nogales, Sonora, Mexico, had the following communication:

"Ygnacio Bonillas was today appointed chief officer of the Department of Fomento and Communications. Secretaries of the department will be appointed later. Bonillas is a graduate of Boston 'Tech' and is a prominent mining engineer."

1885.

I. W. LITCHFIELD, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Word was received late in November that E. C. Lufkin had been made president of the $50,000,000 oil company founded by John W. Gates. The company underwent a complete change in management, and Lufkin was the choice of the new executive committee. Some years ago he left the management of the Snow Steam Pulp Company of Buffalo to become connected with the Texas Company, and since that time he has occupied the position of chief engineer. The former president was J. S. Cullinan of Houston, Texas.—We have just received a line on Eaton. The last seen of him he was in Egypt on his way to the Assouan Dam. He has been making a tour of Great Britain and Europe by automobile and will probably spend the winter abroad.—Charlie Brown has just emerged from the hospital and is like his old self again. He is a successful enthusiast in the art of marketing unusual products made of paper, and for many years has devoted his energies along these lines. His company, C. D. Brown & Company, Incorporated, is now located at 140 Washington St.—James H. Bates, M. E., made a call at the Institute last month and visited some of his old friends around the building. Bates, who was recently married, has an office at 79 Wall St., where he is engaged as a consulting engineer.—Arthur D. Little, Incorporated, continues to broaden the scope of its engineering laboratory. Announcement was recently made of a forest products department under the direction of Dr. L. F. Hawley, formerly in charge of the section of wood distillation and chemistry of the United States Forest Service. This department will be fully equipped for efficiency studies, the examination of new processes, or the solution of any problem in connection with turpentine, rosin, or other forest products, wood distillation or the utilization of wood wastes.—Harry P. Barr, who is with the Lamson Store Service Company of Boston, runs into town once in a while and is seen loose on the highways. Harry has a genial smile, and it ought to be worth something to the city lighting department to keep him here.—C. H. Bartlett is still at 60 Pember-

ton Building, Boston, where he is engaged in the profession of law in connection with general engineering practice. Bartlett took a course in law at the Y. M. C. A. a few years ago and was for some years president of the alumni association of that department. —Winthrop Packard's name is a familiar one in the *Transcript* and in some of the magazines in connection with out-of-door life, more especially with ornithological subjects. Packard is a very pleasing writer and pictures nature in its most attractive phases. His pen carries the atmosphere of the woods and hills and the ocean. —In the November REVIEW is a picture of the clam-bake of the New Bedford Club, and those who are acquainted with Andrew G. Pierce of that city will see his picture in the foreground on the right. —The McGraw-Hill Book Company has recently published a book by Frederick H. Newell entitled "Principles of Engineering Education," review of which appears in this number. The recognition which is coming to Newell's work after so many years of severe struggle against opposition in high places, is of great satisfaction to those who are interested in the enterprise he began so many years ago, and which he has carried through to a point where it is now securely established. The present administration apparently appreciates the tremendous results that have grown from Newell's foresight and unremitting efforts. D. W. Murphy, an engineer in the services, is co-author with Newell in the authorship of this book.

The sudden death of Frank Rand was a great shock to the members of the class who were fortunate enough to have been associated with him since his adoption by '85 two or three years ago. Rand's interest in Technology was above everything else with him, and the enjoyment he had from his relations with the class was very great. He never missed a class meeting of any kind, and he insisted that as he was an adopted member of '85 that he had a right to subscribe to the Alumni Fund. He was as interested in the class as he was in all his Tech connections, and had made many warm personal friends among our classmates. The services at the house were attended by Steele, Merrill, White, Talbot, Morss and Litchfield. Those who accompanied the body to Lowell were Talbot, White and Litchfield. The class sent a tribute of flowers.

Fred Newell read the appeal of the secretary for news in the TECHNOLOGY REVIEW, and was good enough to write, making the statement that he liked to hear about the other men, and was glad to do his part. Newell has just returned to Washington after an absence in the West for the last six months, during which time he visited most of the states on the coast, together with Montana, Idaho, Utah, Nevada, Arizona and New Mexico. His letter is as follows:

Last month closed the twenty-fifth year of my continuous service for the United States, and I celebrated by inviting my wife to take part on this trip, so that for the first time she was able to see some of the things I have been talking about for a quarter of a century.

The condition in the West during 1913 has been quite good. The crops have been better than in previous years, and the prices above the average. The irri-

gators on the lands reclaimed by the United States, as a rule, are doing quite well and are more optimistic than in previous years, as they are getting accustomed to pioneering conditions and more appreciative of opportunities offered to them in building up small homes and farms. We now have about 20,000 families located in the different western states on lands which are being supplied with water through the works built by the government at a cost now of about $80,000,000. We are spending upwards of $1,000,000 a month in continuing construction of these works and now have some of the largest reservoirs in the world, together with hundreds of miles of large canals, and thousands of miles of smaller distributaries, with almost innumerable structures, turnouts, gates, bridges, culverts, etc. As a whole, the work is progressing well, and is being well supported.

The Secretary of the Interior has suggested that Congress provide $100,000,000 for continuing the work, to be expended at the rate of about $10,000,000 per year in addition to the funds which they are now receiving.

This will give you some idea of what is going on along this line. We are employing a good many Technology graduates, as well as men from nearly every scientific school and college of importance in the country.

Arrange to attend the convention of the Technology Clubs Associated in Chicago, February 20 and 21.

1886.

ARTHUR GRAHAM ROBBINS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

A recent issue of *Science* prints the following in regard to mining properties lately acquired by A. I. du Pont:

"The popular belief has been that the chief source of radium is the mineral pitchblende, especially that obtained from the mines now under control of the Austrian government at Joachimenthal, Bohemia, and pitchblende is the richest and most eagerly sought uranium radium ore. Outside of the ore in Austria, the only pitchblende deposits of any size are those in Gilpin County, Colorado, from which some thirty tons, more or less, have been procured since the mineral became valuable as a source of radium. The Denver papers recently announced that these pitchblende-bearing mines have been acquired by Alfred I. du Pont, of Wilmington, Delaware, and it is greatly to be hoped that their exploitation under his direction will yield an increased supply of this valuable mineral."

1888.

WILLIAM G. SNOW, *Sec.*, 24 Milk Street, Boston, Mass.

J. C. Runkle has returned from an extended trip to the Pacific coast with Mrs. Runkle. He was recently nominated as term member of the Corporation.—G. V. G. Holman of Johnstown, Pa., was recently in town. He is interested in street railways in that city and Altoona and about there.—Ivan L. Sjostrom contributed a lengthy article to the *American Wool and Cotton Reporter* on the subject, "Equitable Duty on Wool and its Manufactured Products."—B. G. Buttolph and S. E. Thompson attended the

recent A. S. M. E. convention in New York.—Stone & Webster are vigorously prosecuting the work at the site of the new Tech buildings.

It is hoped that Eighty-eight will be well represented at the All Technology reunion in Chicago, February 20–21 next.

L. A. Ferguson is on the executive committee.

Chicago will welcome all with true Western hospitality.

Confirmation of the death of Lowell F. Hobart has just reached the secretary. He died February 17 last, after an illness of several months. He left a widow and one son, Lowell F. Hobart, Jr. twenty-two years of age.

1889.

WALTER H. KILHAM, *Sec.*, 9 Park Street, Boston, Mass.

Kunhardt presented a valuable paper on "Preservation of Life in Factory Fires" at the last semi-annual meeting of the National Association of Cotton Manufacturers at Atlantic City, in which he showed what a remarkable record of safety has been obtained under the Factory Mutual System.

By the time this copy of the REVIEW is published Lewis' report on a comprehensive scheme on subways for the city of Providence will have appeared.

The committee on the twenty-fifth reunion has held several meetings and is at work on a scheme which will provide the most enjoyable reunion ever held by '89.

All '89 men are urged to attend the Technology reunion, in Chicago, February 20–21, 1914. A good delegation from '89 would be well received.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

A. W. Woodman was in Boston a few days in November, looking as natural as ever.—The Fore River Company are building the frame for a telescope for Mount Wilson, at Pasadena, Cal., that will be the largest in the world. The contract price will amount to about two hundred thousand dollars alone, and has nothing to do with the lens, which will measure one hundred inches in diameter. The telescope now in use has a lens that measures sixty inches in diameter. This work comes under the charge of George E. Hale of our class.—An interesting article appeared in the daily *Evening Item* of Lynn, November 1, relative to the many inventions of the late Seth D. Tripp, father of our classmate, Thaxter N. Tripp. Many of these inventions have added greatly to the present methods of manufacturing shoes.—"Johnnie" Glidden of Dekalb, Ill., during the past fall has taken to using the pick and shovel. In October, Glidden with a few other congenial spirits, known as the "Millionaire Kids of Dekalb," organized and executed a rousing road-making bee. Everyone turned out on blow-

ing of a siren at daylight, and worked until twilight on the main highway. The result of which was that they had completed eighty rods of compact gravel road, where there had been in the morning a long stretch of oozy mud. All appeared dressed in blue flannel shirts and overalls, each man with his shovel or pick. If Glidden would like some more work of the same sort, we should be pleased to see him in the East.—Charles Hayden returned in November from a six weeks' trip to Alaska. At the opening night at the Boston Opera House this season, he occupied his usual box with guests.—At the annual meeting of the Washington State Chapter of the American Institute of Architects, at the University Club in Seattle, Charles H. Alden was elected president. He was also chosen as one of the delegates at the annual convention to be held in New Orleans in December. Alden's business is now at the office of director of works, San Francisco, Cal.—Elton D. Walker's residence is now at 407 West Beaver Ave., State College, Pa.—At the annual meeting of the Brunswick Fox Hound Club, held at Barre, Mass., in October, Otis Daniells' dogs, Blaze and Bugg, were among those that ran in the field trials. At the annual election of officers, Daniells was elected president.

The following press despatch will interest members of the class:

The concrete pier which will support the longest telescope in the world was completed in October on the crest of Mount Wilson. The telescope, which will have a one-hundred-inch lens, will improve the Carnegie solar observatory, which at present is supplied with a sixty-inch instrument. By means of the new glass, it is predicted, photographs of stars will be made which heretofore have been impossible.

Prof. Walter S. Adams, assistant director, in speaking of what may be expected when the one-hundred-inch lens for the new telescope is installed, said that among the prospective discoveries or demonstrations, the one probably of greatest interest to the layman is the effect of sun spots upon the atmosphere enveloping this planet. The deductions therefrom may revolutionize present theories of meteorology and make weather predictions an exact science.

"When Mr. Carnegie was at the observatory a year ago," said Prof. Adams, "he declared that Professor Hale was the greatest astronomer in the world today. Dr. Hale made one of the most wonderful discoveries of the age, a short time before Mr. Carnegie's visit, when he determined definitely that sun spots were great electrical vortices moving across the sun like terrestrial cyclones. We are now working on the probable effect of these sun spots on the earth and stars. We have already discovered that the spots do affect both earth and stars magnetically and have something to do with magnetic storms on the earth. This is an old theory, but never before was it definitely determined. We were able to do it by means of our sixty-foot tower telescope.

"Our new telescope will be 150 feet long and the spectroscopical instruments will be placed 80 feet below that, making the entire telescope 230 feet long. There is nothing like this anywhere in the world and it will magnify the image of the sun many times more than the present telescope and we hope to make many new discoveries and deductions. We have been using our great sixty-inch reflecting mirror telescope for two years, with which we have made many excellent photographs of the sky, revealing thousands of objects and stars never before seen.

Ernest A. LeSueur of Ottawa, Canada, in December in New York at the meeting of the American Institute of Chemical Engi-

neers, read a paper on "Notes of Unpublished Works on Electrolysis," and another on "Recent Developments in Commercial Explosives."

Since receiving his degree at Tech, Mr. LeSueur has devoted almost his entire time to scientific research work.

H. M. Waite of Cincinnati, city engineer of that city for the past two years, was elected city manager of Dayton, Ohio, by the local City Commission in December. His new duties are to begin January 1.

The commission manager form of government is a practical experiment,—an attempt to successfully solve the administration of city affairs, and that Mr. Waite should be selected after a long and searching campaign proves his qualifications for the office are of the best. That an expert on municipal affairs was necessary is shown by the fact that Col. George W. Goethals, chief engineer of the Panama Canal, was first offered the position, but declined, feeling it his duty to remain on the canal. Mayor Hunt of Dayton spoke of the appointment as follows:

He is not only a wonderful organizer, but also a great executive, two qualities which he demonstrated to a marked degree during the two years he has been identified with the present city administration. Waite also possesses remarkable personal magnetism, which insures unqualified loyalty from his subordinates, a trait very essential to a position he has been called upon to fill.

During his two years' service for the city he has placed the city engineer's department on a standard which will be difficult to maintain and which has won the highest encomiums from experts in that profession throughout the country. The street improvements and other construction work which he has undertaken for the city attest his ability as an engineering expert of the highest order, and his place will be hard to fill.

City Engineer Waite is a graduate of the Massachusetts Institute of Technology at Boston.

After leaving Tech he obtained a position in an engineering capacity with the Big Four Railroads at Indianapolis. Subsequently he had charge of bridge construction work for the Cincinnati Division of the C., N. O. & T. P. R. R., lessee of the Cincinnati Southern, under General Manager W. A. Garrett, with headquarters at Lexington, Ky. He later was promoted to the post of superintendent of maintenance of way for the same division of the road. A similar post also was held by him on the Chattanooga division of the road.

When Mr. Garrett became vice-president of the Seaboard Air Line Mr. Waite was appointed superintendent of the Atlanta and Birmingham division of that road. A few years ago Mr. Waite was elected vice-president and chief engineer of the Clinchfield Coal Company, at Dante, Va. He held this post when he was prevailed upon to accept the post of city engineer by Mayor Hunt, at a salary of $6,000 a year.

Mr. Waite is a grandson of former Chief Justice Waite of the U. S. Supreme Court.

We are certain "Chic" will make good in this position, as we all remember his perseverance and plugging qualities when fullback on the old Varsity team in '89.

The city of Dayton is certainly to be congratulated on securing the services of Mr. Henry M. Waite for this responsible position,

as his experience during the past twenty odd years has certainly fitted him for such responsibility.

The first notices for the All Technology reunion at Chicago, February 20 and 21, 1914, have been sent out, and we presume that all of you have read them carefully, and are making plans to be present at that grand occasion.

Certainly all of us who attended the reunion in New York early this year will make an effort to have another good time, and knowing the character of the Chicago fellows, we are very sure that any of us who are able to be present will never have any cause to regret it, even if we do at the moment forget some parts of it.

Any of you who expect to be present will kindly notify your secretary as soon as possible, so that arrangements can be made for any of the class who are going from the East or coming from the West to get together and renew old acquaintances.

A. W. Woodman, 122 South Michigan Building, Chicago, Ill., has been appointed class booster, to look after the interests of the class, so that under his management we are guaranteed a good time and a grand reunion.

1891.

HOWARD C. FORBES, *Sec.*, 88 Broad Street, Boston, Mass.

Margaret E. Maltby, Ph. D., who is a teacher of physics at Barnard College, was recently interviewed in regard to her work and experiments in higher electricity, by the *New York Herald.* We quote as follows:

I spent some years in research work in Germany, and it was there during a year of private work that I devised a method of measuring rapid electric oscillations and conductivity. When I find time from my lectures I work on a new point of attack and hope to accomplish something. Beyond a few monographs on discoveries in the frequency of vibration I have done little that I hope for. (She considered it little that a woman should add to the higher knowledge of electricity, a study in which only men were engaged and recognized a few years ago.) I am glad to be numbered in the roll "Men of Science" and hope some day to hit on something useful in my experiments.

She neglected to mention that in the list "Men of Science" there is a star before her name. Also she neglected to say that she is the first woman to receive a scientific degree in Germany. She is a graduate of Oberlin, the Massachusetts Institute of Technology and Göettingen University, Germany. It was while engaged in private research in the Physikalischtechnische Reichanstalt that she made her discoveries.

1892.

W. A. JOHNSTON, *Sec.*, Mass. Inst. of Tech., Boston, Mass.
C. H. CHASE, *Asst. Sec.*, Tufts College, Mass.

The *Inter-Ocean,* Chicago, Illinois, prints a short sketch of Albert P. Mathew's life. It states that after leaving the Institute he

went abroad to study biology. Upon his return he held a professorship at several colleges settling at the University of Chicago since '01. He is known for his original investigations in parthenogenesis, upon the nature of nerve impulse in pharmacology and chemical biology.

1893.

FREDERIC H. FAY, *Sec.*, 60 City Hall, Boston, Mass.
FREDERIC H. KEYES, *Asst. Sec.*, 739 Boylston Street, Boston, Mass.

Albert Farwell Bemis, president of the Bemis Brothers Bag Company, left Boston in December on a trip to India on which he will be absent about six months.—Bert Dawes and Harry Latham are planning to start February first on a Mediterranean trip which will take them as far as Egypt and from which they will return to Boston about the middle of April.—William R. Copeland is chemist of the Metropolitan Sewerage Commission of the city of New York, his address being Room 1113, 17 Battery Place, New York. He writes:

> Left Tech in April, 1893, to take a position at the Experiment Station of the Massachusetts State Board of Health, serving as bacteriologist for four years; held position of bacteriologist and manager of Experimental Water Filtration Plant at Pittsburgh for three years; served as bacteriologist and later as superintendent of Experimental Water Filtration Plant of Philadelphia for three years; served as bacteriologist of the Sewage Testing Station, Columbus, Ohio, for one year; as assistant engineer, Bureau of Filtration, Pittsburgh, Pa., for three years; had charge of Water Filtration Plant (water softening and mechanical filtration) for three years in Columbus, Ohio; then employed as chemist by Metropolitan Sewerage Commission, New York, since October 1, 1911.

Copeland was graduated from Harvard in 1892, and took a year's post-graduate work with the class. He has delivered lectures to the students of the Institute, the Ohio State University, and the University of Pennsylvania, and has written many technical articles for the *Engineering News* and other trade journals. He is an associate of the American Society of Civil Engineers. For three years he saw military service as a member of the Pennsylvania National Guard. In 1899 he married Miss Anne Horton Young, and they have one child, a daughter.—William W. Crosby is a consulting engineer at 53 State St., Boston, Room 1111, where he is associated with Mr. F. W. Dean. The first two years after graduation Crosby spent as assistant instructor in mechanical engineering at the Institute, and the three following years as superintendent of power and plant, Otis Allen & Son, Lowell. During the latter year also he was lecturer and professor of mechanical engineering at the Lowell Textile School, and in 1898 he became principal of that school, which position he held for a number of years. Afterwards, he was for a time factory manager of the Brighton Mills, Passaic, N. J., and for the past seven years has been practising mechanical engineering in Boston. He has seen

military service as a member of Company G of the Fifth Regiment, Massachusetts Volunteer Militia; and in Woburn, his former home, he has served as chairman of the school committee, as trustee of the Choate Memorial Hospital, and as trustee of the Warren Academy. He is known as a writer on textile subjects. He is a member of the Sigma Alpha Epsilon Fraternity, the Technology Club, the M. P. Club, Society of Arts, Engineers Club, and the American Canoe Association. He married in 1909 Miss Marian Shaw, and they have a son, William Wyman, Jr. The Crosbys live at 8 Old Mystic St., Arlington, Mass.—Courtland R. Darrow is highway commissioner of the city of New London, Conn., a position which he has held for the past six years. The first three years after graduation were spent by Darrow in municipal work under the city engineer of Norwich, Conn., and the two following years he was engaged in electric railway engineering at Waterbury, Conn. From 1898 to 1900 he was resident engineer at Albany, N. Y., on the construction of the Albany & Hudson Railway, and from 1901 to 1905, at New London, Conn., engaged in building the Groton Water Works and the Groton and Stonington Street Railway. After a year in contracting work Darrow was appointed to his present position. He is a member of the Connecticut Society of Civil Engineers, the Association of Connecticut Road Officials, the New London Business Men's Association, the Masons and Elks. In 1899 he married Miss Alice L. Hall and they reside at Waterbury, Conn., just outside New London, in an attractive location overlooking Long Island Sound.—Albert G. Davis is manager of the patent department of the General Electric Company, at Schenectady, N. Y. In 1893–94, he was engineer for the Davis-Colby Ore Roaster Company, and then for two years was assistant examiner in the United States Patent Office at Washington. In 1896 he began the practice of law in Washington, and December 27, 1897, was appointed to his present position, and moved to Schenectady. Davis studied law at the National University Law School from 1894 to 1897, and in the latter year received the degree of LL.M. He is a fellow of the American Institute of Electrical Engineers, a member of the Mohawk Club, the Mohawk Golf Club, and the Schenectady Boat Club of Schenectady, the University Club of New York, Fisher's Island Sportsmen's Club, Adirondack League Club, American Bar Association, the Washington (D. C.) Patent Law Association, the New York Bar Association, and other organizations. He married Miss Agnes H. Shaw in 1898, and they have one daughter. His home address is 112 Lenox Road, Schenectady, N. Y.—Herbert N. Dawes is vice-president of the Nightingale & Childs Company, vice-president of the Putnam-Morrill Company, and president of the Cerro Gordo Fruit Company, his business address being 205 Congress St., Boston. The "Senator" still lives in Chelsea, as of yore. For three years after graduation Dawes

held positions with the Middlesex County engineer, with the motive power department of the Fitchburg Railroad, and as assistant engineer for the Massachusetts Highway Commission. In 1896 he entered the employ of S. C. Nightingale & Childs, as engineer and salesman, and upon the reorganization of that company under the present firm name in 1902, he was made vice-president. This company handles asbestos and magnesia products, heat and cold insulation and engineering specialties. He is also vice-president and director of the Putnam-Morrill Company, which was formed in 1911. Dawes writes that his amusements and recreations are horseback riding, golf, swimming, mountain climbing, canoeing, fishing, and outdoor sports in general. In 1901 and also in 1906 he traveled in Europe. In addition to various vacation trips in Canada and the West and South, Dawes has made several trips to the West Indies, particularly Porto Rico, where he has an interest in grape-fruit growing. He is a member of the American Society of Mechanical Engineers, the Engineers Club, Technology Club, Exchange Club, Tedesco and Vesper Country Clubs, the Boston Chamber of Commerce, the Appalachian Mountain Club, Innitou Canoe Club and the Sigma Alpha Epsilon Fraternity.—Charles D. Demond is testing engineer for the Anaconda Copper Mining Company at Anaconda, Montana. After a year and a half in the concentrator and assay office of the Boston & Montana Consolidated Copper and Silver Mining Company, at Great Falls, Mont., Demond was for five years assistant to Professor Richards of the Institute in work connected with the preparation of Professor Richard's book upon ore dressing. In 1902 he became assistant testing engineer, and since 1903 testing engineer of the Anaconda Copper Mining Company, engaged in investigating various problems in ore dressing, metallurgy, construction and mechanical engineering. Demond prepared a chapter on Metallurgy for Thorp's "Outlines of Industrial Chemistry," and has written many technical papers. He is a member of the American Institute of Mining Engineers. Demond was married in 1896 and has two daughters. Frederick N. Dillon writes:

> Since leaving the Institute I have been located in Fitchburg (Mass.) with the D. M. Dillon Steam Boiler Works of which I am treasurer. My spare time has been spent in traveling abroad. In 1909 I visited Africa and the European countries which border on the Mediterranean; in 1910 South America, West Indies, and Mexico; in 1911, Turkey, Greece, and the Balkan States; in 1912, a trip around the world, and in 1913, Russia, Poland, and other European countries.

Dillon is a member of the Fay Club and the Alpine Golf Club of Fitchburg, the Tatnuck Club of Worcester, the Boston Athletic Association, Engineers Club, and Exchange Club of Boston, the Wamsutta Club of New Bedford, the Quequechan Club of Fall River, the National Association of Cotton Manufacturers, and the American Society of Mechanical Engineers. In 1898 Dillon

married Miss Margaret Downes Morse, who died as the result of an accident, in 1906, leaving three children, a son and two daughters. Dillon writes:

> There are three '93 men living in Fitchburg, W. B. Page, R. N. Wallis, and the writer, and we shall always be pleased to see any of our class who will honor our city with a visit.

—Samuel Douglass Dodge is assistant engineer with the New York Board of Water Supply, and is located at Cornwall-on-Hudson, New York. After a short teaching experience at the Institute and some work on the surveys for the water board of Winchester, Mass., Dodge spent ten years with the distribution department of the Metropolitan Water Board of Massachusetts, leaving in 1905 to take up his present work with the New York Board of Water Supply. He is an associate member of the American Society of Civil Engineers, member of the Boston Society of Civil Engineers, the Municipal Engineers of New York, and the Technology Club of New York. Before the Municipal Engineers of New York he read a paper on "Surveys and Investigations for the Hudson River Crossing of the Catskill Aqueduct."—Joseph C. Dufort has an extensive practice as architect at 192 St. Catherine St., West, Montreal, Canada. After leaving Tech in '93 Dufort was employed in architects' offices until February, 1895, when he opened an office for himself in Montreal. He has built a number of public buildings, as well as commercial and mercantile buildings, residences, and a theatre, and at present is engaged in building one of the largest office buildings in Montreal. Before coming to the Institute he was for six years a student of Ste. Mary College in Montreal. In 1899 he married Miss Julia Marguerita Braün, and has three children. Dufort is a member of *L'Alliance Nationale* Society. In politics he is a "Liberal."—Ariel Ballou Edwards is located at Woonsocket, R. I., where he is engaged in real estate business, and is manager of a hotel. He writes:

> After leaving Tech I spent two years designing, building and opening the St. James Hotel, which was then leased. I spent the next seven years going through the different departments of a large cotton mill, learning the business. In 1903 I left the mill business and took charge of the St. James Hotel, which, with real estate business, is my present occupation. I aim to retain my health by spending some time in the open air, as fox hunter, bird hunter, fisherman and golfer.

He is a member of the Rhode Island Technology Club, the Woonsocket Business Men's Association, the Cumberland Golf Club, the Woonsocket Country Club, the Brunswick Fur Club, New England Fox Hunters' Club, Mayflower Society, secretary to the Society of Descendants of the Founders of Providence Plantations, and president of Cranston Country Club.—Joseph W. Ellms is in practice as a consulting engineer at 603 Miles Greenwood Building,

Cincinnati, Ohio, and is also superintendent of filtration of the Cincinnati Water Works. He writes:

On leaving the Institute I became assistant chemist to the Massachusetts State Board of Health in its Boston laboratory, which had charge of the investigation of the purity of public water supplies and the control of sewage disposal plants. Remained there over three years engaged in routine and research work. In 1896 I went to Louisville, Ky., to become assistant chemist to the Louisville Water Company in its investigation of methods for the purification of the Ohio River water, and remained here during research work for about a year. For the first six months of 1897, I was with the Massachusetts State Board of Health and from their Boston laboratory at the State House went to Brooklyn, N. Y., and became chemist to the Brooklyn Health Department, completing this work and reporting on the same in December, 1897. On February 1, 1898, I became assistant chemist to the commissioners of water works, of Cincinnati, engaged in research work on methods of water purification for over a year. In 1899 I was appointed chemist to the commissioners of water works at Cincinnati, in charge of their engineering and testing laboratory, and held this position for over eight years, or during the construction of the new water works, which cost to build over eleven millions of dollars. During this time I performed much experimental work in connection with the design of the filtration plant for the city. In 1907 I was placed in charge of the new filtration plant as its superintendent, which position I have held continuously ever since. On January 1, 1913, I opened an office for doing consulting work along the lines of water purification, but am giving only part of my time to this work, the other part being given up to administering the business of the filtration plant.

Ellms is a member of the American Society of Civil Engineers, the American Public Health Association, and the American Chemical Society. He is a member also of the Masonic Fraternity, and the Cincinnati M. I. T. Club. He is the author of a dozen or more scientific papers on technical subjects, numerous special and routine reports, and many addresses on technical subjects of various kinds. In 1897 he married Miss Geneva E. Conradt, and their family consists of three daughters and one son. Their home is at 2812 Madison Road, Cincinnati.—James A. Emery is consulting engineer with Ford, Bacon & Davis, at 115 Broadway, New York City. The first year following graduation was spent as an assistant in the civil engineering department at the Institute. Emery was for three years with William Wharton, Jr., & Company, of Philadelphia, manufacturers of street railway special track work. In 1897–99, he was engaged in independent engineering work for street railways, with office in Boston, his principal work being on the Worcester and Blackstone Valley Street Railway, and the Webster and Dudley Street Railway. In 1899 he became associated with Ford, Bacon & Davis, New York, in charge of the design and construction of street railways and electric light and power systems in Atlanta, Ga., and Birmingham, Ala., and from 1903 to 1907 was vice-president and general manager of the Birmingham Railway, Light & Power Company. Since 1908 he has been associated with Ford, Bacon & Davis, with headquarters in New York, being engaged principally on reports and valuations of public utilities. This work has included a complete report on the property and operations of the Toledo (Ohio) Railways &

Light Company; a report on the service of the Philadelphia Rapid Transit Company for the Pennsylvania State Railroad Commission; valuation and report for the Consolidated Gas Electric Light & Power Company of Baltimore; report on power market and production in Pittsburgh and vicinity; and report on rapid transit for the city of Philadelphia. Emery is a member of the American Society of Civil Engineers, the Technology Club of New York, the Park Hill Country Club of Yonkers, N. Y., and of various Masonic orders. He married in 1903 Miss Annie Comer, and they have three daughters.—Sidney S. Emery is chemist for the E. I. du Pont de Nemours Powder Company at Louviers, Douglas County, Col. The first few years after leaving Tech were spent by Emery in various lines of manufacturing chemistry. About fifteen years ago he drifted into the high explosive business, in which line he has since been engaged. He married in 1896 Miss Anna Payne Butler, and they have one son.—Burt L. Fenner is a member of the firm of McKim, Mead & White, architects, 101 Park Ave., New York City. On leaving the Institute in 1891, Fenner entered the office of McKim, Mead & White, with whom he has been associated ever since, becoming a member of the firm in 1906. Prior to this course at the Institute, Fenner attended the University of Rochester, from which institution he received the honorary degree of master of arts, in 1911. He is a member of the board of directors of the American Institute of Architects, member of the Technology Club of New York, Century Association, Calumet Club, Sleepy Hollow Country Club, Psi Upsilon Fraternity, and Psi Upsilon Club of New York. In 1896 he married Miss Louise McKittrick, and they have one son. Fenner's home address is 306 West 83d St., New York.—Fred B. Forbes is first assistant chemist of the Massachusetts State Board of Health, his office being Room 502, State House, Boston. He has been connected with the Massachusetts State Board of Health since graduation; from 1893 to 1897, as assistant chemist at the Lawrence Experiment Station, and from the latter year to date in his present position. In 1902 he married Miss Anna Maude Soule, and has two sons, his home address being 16 Haskell St., Cambridge, Mass. Forbes is a member of the Boston Society of Civil Engineers, New England Water Works Association, American Public Health Association, American Chemical Society, and Sons of the American Revolution. He has written papers for technical magazines and has given talks before different organizations on subjects connected with the work of the State Board of Health.—Arthur E. Fowle is plant manager of the Yaryan Naval Stores Company, Gulfport, Miss. Since graduating in chemical engineering at the Institute, Fowle has had a somewhat varied career, the first three years being spent with the Boston Bridge Works, as draftsman, estimator and traveling salesman. The next four years were spent with William F. Jobbins, Inc., Aurora, Ill., as chemical engineer

and contracting salesman. Fowle then spent twelve years with La Compañia Industrial Jabonera, at Gomez Palacio, Durango, Mexico, as superintendent of the soap and glycerine departments. In 1912 Fowle made a hurried exit from Mexico and entered upon his present position. The Yaryan Naval Stores Company was the first to make a success of utilizing the dead and down timber and stumps of the southern forests for the production of rosin, turpentine and pine oil, and its two plants, one at Gulfport, Miss., and the other at Brunswick, Ga., turn out 800 barrels of rosin per day. Fowle writes:

My principal amusements are golf and fishing. Travel during my stay in Mexico consisted in alternate yearly trips to San Francisco and Boston, but I was never fortunate enough to be able to attend a single Tech function since graduation. During my last two years in Mexico I had to take more than one additional trip to get my family out of danger from the constant revolutionary mixup. In March, 1912, my house was directly in line of battle for over three hours, during which time I had Mrs, Fowle and the kidlets, nursemaid and cook, hidden in an inner closet, while Mauser bullets entered the rear windows. After it was all over I picked several souvenir bullets out of the kitchen wall. This was the last straw and a pretty big one. We packed our trunks the next day and came to "My Own United States." I returned two months later and fortunately found my house unmolested. Sold out at no small sacrifice but fortunately fell into my present position, which is the most interesting and congenial work I have ever had.

Fowle married in 1903 Miss Mary Louise Stevens and they have a son and a daughter. He is a member of the Delta Kappa Epsilon Fraternity, Masonic orders, and the Mississippi Coast Country Club.—John Howland Gardner is general manager of the Fall River Line at Pier 14, North River, New York City.—Charles F. Garlichs, architect, is located at 190 Montague St., Brooklyn, N. Y. He was married in 1908 to Miss Rankin. He is secretary and director of the Caledonian Hospital of the city of New York.—Clarence D. Gilchrist is a department store manager, at 318 Union Street, Lynn, Mass.—Howard Gilmore's address is 87 Holland Road, Brookline, Mass. He writes:

For about one and a half years I was with the Westinghouse Electric & Manufacturing Company, and from 1896 to 1913 was manager and principal owner of the Gilmore Electric Company of Boston, recently sold to the Franklin Electric Manufacturing Company of Hartford, Conn., which was the outcome of the suit had with the General Electric Company, which I won, they paying me substantial damages and finding me a customer for my business. At present I am half owner in the Pittsfield Poultry Farms Company, with plant at Pittsfield, Me., and am also engaged in putting in a large poultry plant at Holliston, Mass., with a 100,000-egg incubator plant, 20,000-chicken breeder plant, 4,000-hen laying plant, 5,000-chicken colony houses, all devoted to day-old chickens. The above was a side line to Gilmore Electric Company, and undoubtedly will be my main business in the future.

Gilmore married Miss Gertrude A. Blaisdell in 1896. He is a member of the Exchange Club, Boston, and the Bræ Burn Golf Club of Newton.—Howard A. Gilson is a manufacturer of elevators at 75 Richdale Ave., Cambridge, his residence being 44 Shore Drive, Winthrop. He married in 1894 Miss Bertha E. LeTour-

neau. He has seen much military service, having served for nine years in the Fifth Massachusetts Infantry, one year during the Spanish War in the Eighth Massachusetts Volunteer Infantry, and one year in Troop A, Massachusetts Cavalry. He is a member of the Masonic and Odd Fellow orders, the National Lancers, and the Winthrop Spanish War Veterans' Association.—Marvine Gorham is secretary and treasurer of the Schweppe and Wilt Manufacturing Company of Detroit, his home address being 170 McDougall Ave., Detroit, Mich. After graduating from the Institute, Gorham was connected for two years with the Yale & Towne Manufacturing Company, for seven years with the Buffalo Bolt Company, and for a year with the Michigan Bolt & Nut Company. From 1902 to 1908, he was connected with the C. C. Wormer Machinery Company of Detroit, and since 1909 has held his present position. In 1909 he married Miss Sarah Givin White, and they have a son and a daughter. Gorham traveled in Europe in 1894, 1899, and 1900, and made a trip to the West Indies in the winter of 1908–09. He is a member of the Detroit Engineering Society, the Detroit Technology Association, the University Boat Club, and Delta Psi Association of Detroit.—Edward McKim Hager is president of the Universal Portland Cement Company, at 72 West Adams St., Chicago, Ill. In 1899 Hagar married Miss Martha W. Barry, and they reside at 1210 Astor St., Chicago. Hagar writes:

From 1894 to 1900 engaged in machinery business, latter part of the time as member of the firm of Edward M. Hagar & Company. January 1, 1900, became manager cement department, Illinois Steel Company. The cement business was made a separate subsidiary of the United States Steel Corporation in 1906, and was then made president. Produced the first barrel of Universal Portland Cement in May, 1900; in 1912 shipped more than any other company in the world—over 10,000-000 barrels. Present output 40,000 barrels a day, or 12,000,000 a year, with plants at Chicago and Pittsburgh, and now building first plant at Duluth. Been abroad twice and usually take recreation either horseback riding or boating.

After graduating from the Institute Hagar took a year's post-graduate course at Cornell, receiving the degree of master of engineering in 1894. He is a member of the American Society of Mechanical Engineers, American Society of Civil Engineers, American Society of Mining Engineers, American Society of Testing Materials, Western Society of Engineers, Engineers Club of Chicago, Engineers Club of New York, Chicago Club, University Club, Onwentsia Club, Duquesne Club, Pittsburgh, Technology Club of New York, Technology Club of Boston, New York Yacht Club, Camden (Maine) Yacht Club. Hagar has a summer home at Camden, Me., and is a devotee of yachting.—John C. Hawley is inspector for the Factory Mutual Fire Insurance Companies at 31 Milk St., Boston. He writes:

Since leaving Tech I have been chemist for the Eastman Kodak Company, and civil engineer for the Metropolitan Water and Sewerage Commission. In 1902 I went to the Philippine Islands as provincial supervisor, one of the governing board

of a province there, doing all sorts of engineering work, including road building, bridges, and public buildings. I came home in 1905 and was transferred to the Quartermaster's Department of the army as a civil engineer. I was stationed at various posts, from Texas to New York, and had charge of all kinds of construction work. I left the army in 1912 and went with the Factory Mutual Fire Insurance Companies, doing inspections of factories for fire protections. My amusements are most anything which will amuse. As for travel I have traveled all over this country, part of Canada, Philippine Islands, China and Japan. Traveling is my recreation and business. Have done too much ever to keep still and will probably go on until I die.

Hawley married in 1907 Miss Bessie Lohman Derby and they have one son. Hawley is living at 5 Park Vale, Brookline, Mass.—Francis William Hight is art manager for *The Youth's Companion*, 201 Columbus Ave., Boston, Mass. He writes:

I designed for seven years after leaving the Institute. I became art manager in 1900, and have continued to the present time. My hobby for a long time has been landscape gardening. I have made quite a serious study of the subject, devoting all of my own time to it for years. I am hoping that one of my boys may inherit my love for "out doors," in which event I will put him through Tech, and try to help him to do what I would do myself, practice landscape architecture.

Hight married Miss Louise Mabel Small in 1897 and they have two sons. They live at 19 Cabot St., Winchester, Mass. He is a member of the Technology Club of New York.—Lawrence S. James is first assistant inspector of Gas & Gas Meters, Board of Gas & Electric Light Commissioners of Massachusetts, his business address being 32 Hawley St., Boston. James has been continuously employed by the Commonwealth of Massachusetts since September, 1893. He states:

Most of my spare time I have been engaged in various religious or semi-religious organizations, having served as a delegate to a great many conventions, etc. I have served as clerk of a large church for six years; treasurer of a church for six years; moderator of an ecclesiastical society three years, during which a church property valued at $80,000 was placed in the custody of an organization to hold it after the original owners were gone and dead. Removing to a new section of Boston I have served four years as moderator of a religious society; member of the board of trustees; standing committee for three years; member of various other committees; chairman of the board of trustees one year. During this time we completed our present $60,000 building, a church seating 600. I was chairman of the committee to dedicate our building, December, 1912. Nearly seven thousand people attended the various services of the dedication. Served as executor and administrator of several estates at various times.

James is a member of the New England Section of the Society of Chemical Industry, of which he was formerly a member of the executive committee, and is a member, also, of the northeastern section of the American Chemical Society, and a member of the Commercial Travelers' Association of America. James was married in 1897 to Miss Harriet Haskel Coan, and they have one son.—Arthur H. Jameson is manager of the steel department of the Malleable Iron Fittings Company, of Branford, Conn. During

the summer following his graduation in '93, he was assistant chemist of the Colorado Fuel and Iron Company at Pueblo, Col., and in the following school year worked at the Institute in Professor Craft's private laboratory, and assisted in teaching chemistry to the Normal School of Gymnastics. In 1894 he went to Chicago as chemist of the Cleveland Linseed Oil Company, which position he held for five years, when the company was absorbed by the American Linseed Company (the trust); and for the latter company he remained as chemist for a few months. In September, 1899, he became secretary of the Logan Manufacturing Company of Phœnixville, Pa., and from May, 1901, to December, 1903, he was manager of the Cornell-Andrews Smelting Company of Attleboro, Mass. For about a year he was superintendent of the Providence Steel Casting Company, and since 1905 has held his present position. As for amusements, Jameson states that his vacations have taken the form of climbing trips in the White Mountains, or cruises on the Sound or the Bay of Fundy, and that lately he is reviving a long forgotten interest in tennis. Jameson was married in 1902 to Miss Rebecca Jameson, and they have two sons and two daughters. He is a member of the American Institute of Mining Engineers, the American Association for the Advancement of Science, the Branford Tennis Club, Saltonstall Club, and the New York Technology Club. Regarding the new Technology James writes:

> Hurry up and get dough enough so that a man isn't gun-shy of every letter that bears the Alumni Association letter head.

—Charles H. Johnson is superintendent and foreman in the Department of Public Works, United States Navy, and for the past two years has been stationed at Guantanamo Bay, on the south shore of Cuba, in charge of labor on construction work at the United States Naval Station. After his graduation from the Institute in 1894 Johnson held several positions with private engineering firms, as well as with the Massachusetts Highway Commission and the Boston Transit Commission. From 1900 to 1903 he was superintendent of the Old Colony Sand and Stone Company, and for four years following was superintendent of the W. A. Murtfeldt Company of Boston, contractors for all kinds of concrete work. During 1907 he constructed and demonstrated the Panama Canal relief map at the Jamestown Exposition. From 1908 to 1911 he was a civil engineer and superintendent of construction in the Quartermaster's Department, United States Army, at Fort Dade, Fla. In the latter year was transferred to his present position in the navy. While in Boston Johnson served nine and a half years in Company D, First Corps of Cadets. He married in 1907 Miss Clara Mary Lindberg and has one son.—Albert Lincoln Kendall is engineer and special inspector of the Factory Mutual Insurance Companies, at 31 Milk St., Room 510, Boston. He remains in

single blessedness and continues to live at his old home on Adams Road, Framingham, Mass. He states:

I have been with the Factory Mutual Insurance Companies since graduation as surveyor and draftsman, head draftsman, regular inspector, engineer, and special inspector. I travel in the course of business through Canada and the United States east of the Mississippi, and south to Florida. I do *not* travel during my *vacations*. My recreations are gardening, golf and military work.

Kendall has devoted a great deal of his time to military service. For the past thirteen years he has served in the Massachusetts Coast Artillery from all grades to captain. He was on the colonel's staff with rank of captain for about two years, and now commands the Second Company (Boston Tigers). He is a member of the Framingham Boat Club, the Framingham Country Club, and the Engineers Club of Boston.—Frederick H. Keyes has been connected with the Sanitary Engineering Company, 739 Boylston St., Boston, Mass., for the past year and a half as an engineer and a director. After graduating from the Institute, Keyes held positions as New England representative of the Turner Brass Works of Chicago; pattern maker with the American Tool and Machine Company of Boston; draftsman with J. R. Worcester & Company, Boston, mechanical engineer with Stone & Webster, Boston, for three years; instructor in the mechanical engineering laboratory at the Institute for four and a half years; general manager of the Robb-Mumford Boiler Company, Boston, for six years; consulting engineer in private practice in Boston for two and one half years, and since June 1, 1912, has been connected with the Sanitary Engineering Company, becoming a director in the company in 1913. One of the interesting pieces of work which he had during the past year was the preparation of plans and specifications covering the heating and mechanical equipment of the Commonwealth Pier at South Boston, the largest steamship pier in America at the present time. He writes:

As a member of the *original* Board of Boiler Rules for Massachusetts, I had the honor and satisfaction of formulating rules covering the construction of steam boilers, which are being adopted gradually by other states and cities as a standard of steam boiler construction.

He served on the Massachusetts Board of Boiler Rules for three years, representing the boiler manufacturers. He was married in 1907 to Miss Annie Claflin Ellis, and they have one daughter. His home address is 407 Central St., Auburndale, Mass. Keyes is a member of the Boston City Club, and of the American Society of Mechanical Engineers.—Edward R. Kimball, Jr., is a stock and bond broker at 10 Post Office Square, Boston. He writes:

I have been a partner in the firm of E. R. Kimball & Company since 1896, engaged in trying to predict the future of the railroad problem, trust problem, currency problem, tariff problem, labor problem, political problem, European problem, Asiatic problem, the problem of diminishing returns in stock exchange business, etc. My principal amusement in vacation time is sailing on the water. The skill acquired has an application in my business.

He married Miss Mabel C. Bayer in 1896, and they have one son. Their home address is 32 Oxford Road, Newton Center, Mass. Kimball is a member of the Boston Baptist Social Union and the Economic Club.—Harry N. Latey is an electrical engineer on special work for the General Electric Company at 30 Church St., New York City. Regarding his professional history Latey writes:

Work, more work, and still more work. With the Westinghouse Electric and Manufacturing Company for five years; then on electrification of the Manhattan Elevated for two years, and then electrical engineer of the existing Interborough Subways in New York until 1907, when I went into business for myself with Mr. F. R. Slater of Cornell. With the firm of Latey & Slater, I handled as construction engineer the line work of the Hudson tubes, the electrical work of the Williamsburg bridge and other railroad work in this district. We also served as consulting engineers of the Rapid Transit Commission; the Public Service Commission for the First District of New York, and the New York State Conservation Committee, and on various other electrical work. I joined the General Electric forces in September, 1913. I have traveled some; had three trips to Europe, and some exploring of my own country. My play, when I have time, golf, or a poor imitation, and some tennis. I also drive an automobile when it will run.

Latey is a member of the American Society of Civil Engineers, New York Electrical Society, New York Railroad Club, American Electric Railway Association, National Geographical Society, a fellow of the American Institute of Electrical Engineers, member of the Technology Club, Railroad Club, and Engineers Club of New York, Searsdale Golf Club, and the Phi Gamma Delta Club of New York. Latey is still single and resides at 587 Riverside Drive, New York City.—Harry M. Latham is manager of the power apparatus department of the B. F. Sturtevant Company, Hyde Park, Mass. Following his graduation Latham worked for two years as draftsman with D. M. Osborne & Company, Auburn, N. Y., on harvesting machinery; three years as draftsman with the Crocker-Wheeler Company, Ampere, N. J., on electrical machinery; and a year on experimental work for the American Bell Telephone Company, in Boston. In 1899 he became engineer of the American Steel & Wire Company of Worcester, Mass., a position which he held for thirteen years, resigning in 1912 to take his present position. He writes:

During my term of service with the American Steel & Wire Company, I was for a time engineer of the wire rope department, and in this connection spent a good deal of time in the mining districts of Pennsylvania, Michigan, Minnesota, South Dakota, Wyoming, Colorado, and Utah, investigating troubles, reporting on new installations, etc. Later I became mechanical engineer of the Worcester district, having charge of all new construction, testing, etc. This work included the installation of many engines and a number of power plants. In 1910 I went to the joint meeting of the American Society of Mechanical Engineers and the British Institution of Engineers in England, spending the summer in Europe. My recreations consist principally of golf and tennis, with a few days of mountain climbing each year.

Latham is a member of the American Society of Mechanical Engineers, an associate of the American Institute of Electrical Engineers and a member of the Engineers' Club of Boston, and the Tatnuck

Country Club of Worcester. He is still single.—St. John A Lawton is a cotton planter and dairy farmer in South Carolina, his address being 41 South Bay, Charleston, S. C. Since leaving the Institute Lawton spent a year in an architect's office in Washington; then for a time was planting with his father, and spent one summer inspecting United States surveys in the state of Washington. After that he was employed as engineer in building the electric railroad of Charleston, S. C., when horse cars were abandoned. He has also done some architectural work in Charleston, the largest job being the remodelling of an old hotel, the Mills House, into a modern hotel, which is renamed the St. John, and of which he was for a time the manager. He married in 1905 Miss Mary Ruth Jennings. Lawton is a member of the Commercial Club, the St. Cecilia Society of Charleston, and the South Carolina Agricultural Society, and several other agricultural organizations. He is a graduate of the Virginia Military Institute of Lexington.—John W. Logan is manager of the Steel Works Department of the Alan Wood, Iron & Steel Company, Conshohocken, Pa. He writes:

For five months after graduation, at the World's Fair in Chicago; then with the Pennsylvania Iron Works Company of Philadelphia, until 1899, "getting experience." From 1899 to 1903, I was in the iron and steel foundry business, and since 1903, have been with the Alan Wood, Iron & Steel Company in various capacities.

He is a member of the American Society of Mechanical Engineers, the American Institute of Mining Engineers, the Markham Club of Philadelphia, and the Delta Upsilon Fraternity. He married in 1897, Miss Rachel Miller Thomas. They have two sons and a daughter and reside at Bala, Pa.—Frederic W. Lord is president of the Lord Electric Company, the Lord Construction Company, and the Lord Manufacturing Company at 105 West 40th St., New York City. He reports:

All my time since 1895 has been given to electrical contracting, and also, since 1904, to manufacturing economizing and protective devices for the electric railroad business.

He is a member of the Engineers Club, the Racquet and Tennis Club of New York, the Richmond County Country Club, and the Theta Psi Fraternity. He married in 1906 Miss Alice H. Kirkham, and with their three daughters they reside at 126 East 65th St., New York City.

1894.

S. C. Prescott, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

A letter recently received from Pollock tells of his change of base from Cuba to Texas. After several years as engineer in charge of roads and paving in Havana he has returned to the states and is now located in San Antonio, Tex., as city engineer. Pollock sent regards to all the class, and best wishes for the re-

unions soon to take place. Anyone passing through San Antonio should certainly make it a point to stop off and see Pollock and may be assured a cordial welcome.—George Owen is extremely busy in the design and construction of a cup defender for the *America's* cup. His boat is being built for a syndicate, and is already under way at Marblehead at the Burgess yards but under Owen's oversight. Owen's success as a boat designer has been constant, and his selection as designer for such an important boat is a tribute to his skill and ability. The class has reason to feel proud of him. Incidentally we wish he might find the opportunity to become more interested in the annual class affairs.—The *Transcript* of December 26 contains an article in which C. G. Abbot is quoted as discussing the effect of volcanic eruptions and volcanic dust on the weather, not merely in the region of such volcanic activities but in widely remote parts of the world. As Abbot has made careful studies of these matters in various parts of the world and has actually measured the temperature and other relations found under these conditions, any statement from him along these lines may be regarded as authoritative.—Gardner has prepared designs for the internal arrangement of the department of architecture in the New Technology which greatly enhance the beauty and usefulness of the rooms. It is hoped the designs and descriptions which have been developed largely as a result of his careful and thorough study may be fully described in the REVIEW. —It is planned to have a reunion of the class at the meeting of Technology Clubs Reunion in Chicago. As this is the twentieth year since graduation it is an occasion of special significance for '94 men and it is hoped that all who can possibly do so will make every effort to attend. We should be unusually loyal at this meeting since the reunion is under the auspices of the Federation of Technology Clubs of which our distinguished classmate, King, is president. Furthermore, it offers to us all an opportunity to meet many of the men in the middle west who have previously always had to come east for a reunion. Let those of us who are in the east and can do so by all means coöperate with our brothers in the west in having a twenty-year reunion in the middle west. The secretary has recently received several letters from men in different parts of the country commending the plan and promising support if possible. Incidentally it may be said that '94 can have a reunion in Boston in 1915 to celebrate our coming of age at the time of the next big reunion and the opening of the New Technology. Let us regard the Chicago meeting as a rehearsal for the later one and do all we can to stir up enthusiasm for our twenty-first. *On to Chicago in February and to Boston in 1915.*—King recently argued a case before the Supreme Court so successfully as to bring a verdict in his favor, and incidentally a million dollars or more into the city treasury of New York City.—Price is located in New York, at 1790 Broadway.—As a result of competitive Civil

Service examination Prescott ranked No. 1 and is now considering the acceptance of the position of chief bacteriologist in the Department of Agriculture at Washington. Probably by the time this reaches the eyes of '94 the decision for or against will have been made.

James Francis Lanigan, Jr.

James Francis Lanigan, Jr., who died November 21, 1913, was born in Fitchburg, Mass., February 16, 1871. His parents removed to Lawrence, Mass., when he was a few years old. He attended the public schools in Lawrence for his early education. In August, 1888, he was employed by the Essex Company as an assistant in connection with water measuring, computations and the general work of a water power company. He remained with the Essex Company until September, 1891, when he resigned to attend the Institute. He took a special course for three years and returned to Lawrence and was associated with his father who was engaged in the iron foundry business under the firm name of the Davis Foundry Company. The firm made a specialty of castings required for steam railroads and also columns, caps, boxes, etc., in mill construction. Most of the cast iron details required in many of the large mill buildings constructed in Lawrence during recent years were supplied by this firm.

He was treasurer of the Dillon Machine Company for three years during its reorganization. He was also president and treasurer of the Emerson Manufacturing Company controlled by his father and himself and engaged extensively in the manufacture of paper mill machinery with success. He was treasurer of the Lawrence Machine Company engaged in the manufacture of centrifugal pumps whose products are sent to all parts of the world.

He made many brief business trips in various parts of the United States and his warm-heartedness and excellent business ability made a large circle of sincere friends and acquaintances who loved and respected him.

He was vice president of the Arlington Trust Company of Lawrence, a member of the Home Club of Lawrence; Merrimack Valley Country Club; The Alumni Association of M. I. T.; Merrimack Valley Technology Club; Order of Elks; Boston Athletic Club.

Outdoor life appealed to him and his visits to the Maine woods each year with a party of his intimate friends were events that were always anticipated. He was an excellent base-ball player, an expert golfer and a most proficient billiard player.

He was married a few years ago and leaves a widow but no children. He died of heart trouble after a brief illness.

1895.

WILLIAM H. WINKLEY, *Sec.*, 44 Kilby Street, Boston, Mass.

A. E. Wheeler, superintendent of the Boston & Montana Reduction department of the Anaconda Copper Mining Company at Great Falls, has tendered his resignation to Mr. C. W. Goodale, manager of the Boston & Montana properties. He has accepted the position of consulting engineer with the Union Miniere du Haut Katanga, in the Belgian Congo and his resignation takes effect January 1.

The following clipping from a Montana paper refers to his resignation as follows:—

Mr. Wheeler came to the Boston & Montana works in September, 1895, after completing a course in mining and metallurgy at the Massachusetts Institute of Technology, and from that date until 1901 he was in the engineering and construction department. In 1901 he was appointed assistant superintendent, and in 1903 he succeeded Mr. John T. Morrow as superintendent. The Katanga Company is to be congratulated on having secured the services of Mr. Wheeler, for he will take to his new position a thorough knowledge of the metallurgy of copper, and of all modern methods in that line.

The Anaconda Copper Mining Company regrets exceedingly that Mr. Wheeler has decided to leave his position which he has filled so long and with such eminent satisfaction to the company. While it regrets that it is to lose the benefit of his unusual and widely recognized ability, it nevertheless wishes him the most unmeasured success in his new position and feels certain that he will enjoy such, knowing that he is able to merit success wherever he may go. He expects to leave December 26, and arrive in Brussels to report for his new position on January 15. There is a possibility that he may take a tour of the southwest on a trip of inspection of copper properties before sailing for Europe and should he choose that course, then he will arrive in Brussels on February 15.

Mr. Wheeler has accepted a better position than the one he held, which is ample proof of the high place he has won in the engineering world. While he will have his headquarters in London and Brussels, he will pass about half his time at the company's properties in Africa. Both he and Mrs. Wheeler have been very popular in social circles and their departure will be regretted by a large coterie of friends.

We have just received word of a number of interesting lectures given last March by F. E. Matthes of the U. S. Geological Survey: Before the Appalachian Club of Boston he spoke on, "The Glaciers of Mt. Rainier." On March 19 he repeated this lecture at Wellesley College. On March 20 he spoke to the classes in civil engineering and mining of the Institute on "The Sculpture of the Yosemite Valley" and the manner in which it is brought out on the Yosemite Map. On March 22 he spoke to the classes in civil engineering, mining and geology of Dartmouth College, on the "Delineation of Land Forms as Exemplified by the Map of the Yosemite Valley." —Louis K. Rourke, commissioner of Public Works, Boston, has been appointed lecturer at the Institute, department of civil engineering.—The New England Association of Chemistry Teachers met at Boston University, November 16, and heard an address by G. W. Rolfe on "Sugar." Mr. Rolfe is well qualified to discuss this subject as he is instructor in sugar analysis at the Institute, and has lived in both Cuba and Porto Rico, acting as sugar expert for companies in those islands.

1896

CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass.
J. ARNOLD ROCKWELL, *Asst. Sec.*, 24 Garden Street, Cambridge, Mass.

Mrs. Charles Henry Wood, announced the marriage of her daughter Elizabeth Farmer to Mr. Nathan Hagar Daniels on Wednesday, November 26, 1913, at Bedford, Mass. Daniels has been associated with the Stone & Webster Corporation here in Boston for over ten years and at present is head of the statistical department.—The following is taken from the *Iron Age*, November 20, 1913:

Henry A. Waterman, for several years general superintendent of the Milwaukee works of the International Harvester Company, has resigned to accept the position of manager of design and manufacture in charge of all plants of the M. Rumely Company, La Porte, Ind. He reorganized and practically rebuilt the Milwaukee works, equipped it with the most modern type of automatic machinery and developed it into what is considered the largest gas engine and tractor plant in the United States employing more than 5,000 men. The past summer Mr. Waterman spent several months abroad studying conditions in the British Isles and on the Continent.

The wonderful discovery of Dr. W. D. Coolidge of the Research Laboratory of the General Electric Company, at Schenectady was announced at New York on Saturday, December 27. His invention has to do with a new method of producing the X-ray which is of great penetrating power and entirely under the control of the operator.—Charles H. Paul, who is on the Government dam at Arrowrock, Idaho, recently called on his classmates in Boston. He is making a circuit of the United States having stopped at Cleveland and Chicago on his way East. He stopped with his parents in Malden. He also gave a talk on the Arrowrock project before the Boston Society of Civil Engineers, on Wednesday, January 7. His return trip to Idaho was by way of Washington and New Mexico.

Prof. Bradley Stoughton, who has become secretary of the American Institute of Mining Engineers in consequence of the discussion and reorganization of management in that body during the past year, has already introduced several changes in the American Institute of Mining Engineers methods which appear to be improvements and will lead to greater activity on the part of the society, and to greater interest on the part of its members. Prof. Stoughton has made a specialty of iron and steel ever since his graduation. The Philadelphia *Evening Telegraph* of October 30, 1913, contains an excellent likeness of Stoughton, and has the following to say regarding him in connection with an address which he gave before the Franklin Institute regarding the problem of the production of sound steel ingots, and the elimination of pipes, blow-holes and foreign particles:

As a metallurgist, Mr. Stoughton is widely known. He was graduated from the Sheffield Scientific School, Yale University, in 1893, and from the Massachusetts

Institute of Technology three years later. For three years he was superintendent and manager of various steel companies, and spent several years as instructor in metallurgy at Columbia University, and later adjunct professor, a position which he occupied for five years. Since 1908 he has been engaged in consulting metallurgical work in New York City. He is a member of the Society for Testing Materials, of the International Association for Testing Materials, and of the British Iron and Steel Institute.

H. C. Lythgoe recently gave an interesting talk before the M. I. T. Chemical Society on the subject of "Pure Food." Lythgoe's work in the laboratory of the Massachusetts State Board of Health makes him eminently fitted to discuss this subject.—M. L. Fuller, in company with his associate, Frederick G. Clapp, Tech '01, left on November 28, for an extended trip to Central China in connection with geological explorations for a large syndicate. The Associated Geological Engineers, of which Fuller and Clapp are managers, has been very successful during the past year and has developed a large foreign business. Parties of geologists have been maintained in Hungary and in Canada throughout the summer, and other parties are now engaged in explorations in Mexico and the West Indies. Fuller expects to be gone several months and to return across Siberia. Mrs. Fuller accompanies him.

The annual reunion which is scheduled for February 20 and 21, 1914, in Chicago, should allow a great many '96 men to be present, who have not felt that they could attend previous reunions in the East. It is hoped that a party of '96 men may be made up from New England and the Eastern States who will thus be able to meet their Western classmates, many of whom have not been seen since graduation. Plans for getting in touch with every '96 man are now under way, and the least that each man can do is to return the reply post-card to the classmate in charge of his section of the country, and say whether or not he expects to go to Chicago. Last year Charlie Lawrence, who had the official position of class "Booster," stated that the thing that hurt his feelings more than anything else was the fact that so many '96 men would not even take the trouble to sign their name to a post-card, write "Yes" or "No," and drop the post-card in the mail. It seems only fair that men like Lawrence who put so much work in the New York gathering, and other men who will have to work hard for the Chicago gathering, should receive this little coöperation on the part of their classmates.

Eddie Mansfield is a little late in reporting the birth of Eleanor Porter Mansfield, on April 20, 1913. This is her official name, but Eddie calls her "some girl."

Edison Life of November, contains a very life-like likeness of Eddie together with a history of his past life; the immediate cause being his appointment as superintendent of the Operating Bureau accounts which is a new department in the Edison

Illuminating Company of Boston. Briefly, his history has been as follows:—

Born and studied in public schools of Wakefield, Mass. With General Electric Company at Schenectady 1889–1892. Technology 1892–1896, working for the Edison Company during vacation. 1896 to date he has been with the Edison Company except for one year. He has served as head of the correspondence division, been in charge of the real estate of the company, has been head of the statistical division, and more recently in charge of the electrical vehicle division. He built up the last named very successfully. He is a director of the Electrical Vehicle Association of America, chairman of the New England section of the association, and vice-president of the Electric Motor Car Club of Boston.

Joe Stickney writes from Indianapolis, that he, together with Whitney, Wall and Wayne constitute the '96 delegation in that city. He and Wayne are busy starting a movement toward a local society in Indianapolis; the result of a little gathering when Prof. Richards was in that city in November. Stickney plans to be at the reunion in Chicago in February, and hopes to see a lot of the fellows there.

The following address changes have been received:—A. E. Smyser, Box 303, New Philadelphia, Ohio.—N. F. Rutherford, 105 Peterborough St., Boston, Mass.—F. E. Guptill, Box 339, Massena, N. Y. (for the winter).—M. L. Fuller, Room 501, 131 State St., Boston, Mass.—F. A. Thanisch, Mammoth, Pinal County, Ariz.—F. F. Schaller, 244 North Ave., W., Cranford, N. J.—M. S. Jameson, 3 Moore Ave., Worcester, Mass.—A. H. Green, 1149 La Salle Ave., Chicago, Ill.

1897.

JOHN ARTHUR COLLINS, JR., *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

At a recent meeting of the Executive Committee the following resolutions were adopted:—

Resolved, That the Class of '97 of the Massachusetts Institute of Technology desires to express their sense of the loss which it has suffered in the death of Robert M. Ferris, which occurred July 13, at Siasconset, Nantucket, Mass.

Scholarly, high-minded and endowed with those lovable qualities which endeared him to his fellow associates, he won distinction first at Technology and later in his chosen profession. A leader among his fellow-engineers, brilliant but withal modest to a remarkable degree, he commanded the respect and confidence of his elders not usual with one so youthful. His brief career is an example which cannot fail to help and inspire those whose privilege it was to know him and the memory of his upright and useful life ever remains with his former classmates.

Resolved, That these resolutions be entered upon the permanent Class Records and that a copy be sent to the bereaved wife and little sons, Robert, Jr., and John, to whom in their deep affliction the sincere sympathy of the Class of '97 is respectfully tendered.

Executive Committee,
CHARLES W. BRADLEE, *Chairman.*
PROCTOR L. DOUGHERTY, *Secretary.*
CHARLES B. BREED.
HARRY F. SAWTELLE.
HARRY E. WORCESTER.

December 19, 1913,
JOHN A. COLLINS, JR., *Class Secretary.*

The attention of all '97 men is called to the All Technology reunion to be held in Chicago on Febuary 20 and 21, 1914. This reunion marks also the second annual convention of the Technology Clubs Associated and all members who can attend are strongly urged to do so. Representatives of the class in each principal city will be appointed to act as boosters to get out—not a large vote—but a large attendance.

Now is the time for those alumni in the Middle West who have never been on East to a Boston celebration to do the next best thing and go to Chicago.

From the Seattle (Wash.) *Times* we learn that Prof. Walter A. Gleason, Course I, of the University of Washington, is to teach mathematics in the day and evening classes of the Y. M. C. A. of Seattle. Prof. Gleason is instructor in civil engineering in the University of Washington:—Walter Humphreys, Course II, registrar of the Institute, and also instructor in the mechanical engineering department has been elected a member of the Brookline School Committee. Mr. Humphreys is also secretary of the Technology Alumni, and a member of the Advisory Council of the English High School Alumni.

Humphreys says that as he has such a large percentage of the Brookline school children, he thinks they ought to be represented.—Charles H. Sweetser, former consulting engineer of Olympia, Wash., senior highway engineer of the United States Office of Public Roads since last July, has been granted leave of absence from his governmental duties in order to prepare plans and supervise construction of road improvements in Calcasieu Parish, La., to cost $900,000. Mr. Sweetser has had an extensive experience in public works engineering in Cuba and Hawaii and was supervising engineer of the Washington State Highway Department, 1907–'09, and chief engineer, 1909–'11.

The sympathy of all '97 men will surely go out to Frank H. Keisker, Course IV, by reason of the death of his wife, Dr. Edith E. Keisker in Philadelphia, October 24, 1913. Dr. Keisker contracted scarlet fever in the course of her work as a school physician and thus sacrificed her life in the interests of school children. Besides her husband she leaves a four months' old baby. The following editorial from the *Philadelphia Ledger* pays a noble tribute to the woman:

Doctor Edith E. Keisker, wife of Frank H. Keisker, IV, '97, has given her life for the school children of Philadelphia as though the heroic sacrifice were made where the world might know of it, instead of in the quiet routine of every day's professional duty.

She visited the Municipal Hospital to qualify as an expert in contagious diseases by the examination of school children who had been stricken with the scarlet fever. Fearlessly incurring the contagion, she was herself a victim of the disease to which she had flung down the gage of battle. Married but a year ago, she is taken by a cruel irony from her new-found happiness, and the comfort of those that mourn for her is only that the example of her fortitude and her devotion shall not die.

When men like Father Damien or young Doctor Brinckerhoff, of Harvard, give their lives for the lepers in far-off Molokai, we rightly bestow on such as these the

insufficient measure of our admiration and our praise; and when the life of a Philadelphia girl is given that more accurate knowledge may save the lives of children, the least that we can do is to render tribute to the true greatness of the sacrifice.

John B. Taylor, VI, who for some years past has been with the General Electric Company at Schenectady, N. Y., as consulting engineer and engineer of their foreign department, has established offices at 100 Broadway, New York City, and offices and laboratory at 23 Lowell Road, Schenectady. He will act as general consulting engineer on technical investigations, tests, inspections, reports, with particular attention to telephone and telegraph relations to electric light and power systems, earth current surveys, transmissions, transformation, and the distribution of energy by electricity.

On Tuesday evening, December 2, the class held its first dinner of the winter season at the Engineers Club in their new building on Commonwealth Ave. The gathering was most enthusiastic and voted a complete success. Following the dinner the members were entertained at Keith's Theatre. The following men were present: Henry E. Worcester, A. W. Jackson, Charles R. Currier, Ralph S Vinal, Ernest F. Learned, Charles W. Bradlee, C. B. Breed, H. W. Smith, George S. Lawler, John E. Carty, Hugh K. Moore, William D. Parker, Herman W. Marshall, Edwin P. Bliss, and Luzerne S. Cowles.—In connection with the Technology Clubs Associated reunion which is to be held February 20 and 21, in Chicago, the executive committee of the class of '97 has appointed the following "class boosters," who will take charge of the cities indicated, with a view to getting in touch with all the class members so that '97 may be well represented at this reunion, which promises to be the greatest yet in the annals of Technology affairs: Boston, Walter Humphreys; New York, John P. Ilsley; Philadelphia, Wilfred Bancroft; Chicago, Henry M. Deavitt; Cleveland, Arthur T. Hopkins; Washington, Frederick A. Hunnewell; Wilmington, Joseph Bancroft; Minneapolis Jesse W. Shuman; Salt Lake City, Owen H. Gray; Seattle, Walter A. Gleason.

The following resolutions were adopted by the executive committee:

WHEREAS: The members of the class of Ninety-seven of the Massachusetts Institute of Technology have learned with deep sorrow of the death of William H. Leach, Jr.,

Resolved, That, in his death, the class loses one of its loyal friends. After graduating from the Institute with high rank, he attained success in a marked degree in his profession as research engineer. He possessed a fine character, and those who came in contact with him admired his lovable qualities. He leaves an enviable record and an inspiring name that will be treasured by his class mates;

Resolved, That these resolutions be entered on the class records and that a copy be forwarded to the bereaved family, to whom, in their deep affliction, our sympathy is respectfully tendered.

CHARLES W. BRADLEE,
C. B. BREED,
JOHN A. COLLINS, JR.,
PROCTOR L. DOUGHERTY,
WILLIAM O. SAWTELLE,
HENRY E. WORCESTER,
Executive Committee.

1898.

A. A. BLANCHARD, *Sec.*, M. I. T., Boston, Mass.

Twenty of the men turned out to the informal dinner on December 11 in one of the private dining rooms of the Boston Athletic Association. Present were Peavey, Dawes, Dodd, Babson, French, F. M. Kendall, Charlie Smith, George Fisher, Bill Perley, Wright, Russ, Blanchard, Wadsworth, Seth Humphrey, Shedd, Goodrich, Treat, Pop Coburn, and Goldsmith and all were well repaid for coming. Babson gave us a heart to heart talk on some of the matters which lie near to his own heart and he showed himself to be a deep thinker not only in statistical lines, but along the line of the social and economic welfare of the nation and of all nations. Although Babson may be radical, he certainly won the sympathy of his classmates to his ideals. We understand that later in the same week Babson addressed the Twentieth Century Club, expressing some rather advanced views. One of his old professors at Tech, who was present, arose later to disclaim any credit for teaching him such ideas. But, as Babson claims, if Tech did not develop its students to be able to evolve original ideas, its education would not be worth what it is. Following is a clipping from the *Boston Advertiser* of December 15:

The complete prohibition of bequests to private persons or institutions, the compulsory handing over of property accumulations to the State, and the gift by the State out of the sums thus rendered available of from $1,000 to $5,000 to each individual of the community on arriving at the voting age was urged by Roger W. Babson, financial expert, at the meeting of the Twentieth Century Club.

What made Mr. Babson's address remarkable was that, claiming association with the country's banking and financial interests, he professed himself an opponent of Socialism, an uncompromising individualist, a believer in the *laisser-faire* doctrine, and a defender of the thesis that all charity organizations, educational organizations and church organizations should be deprived of outside support and compelled to stand or fall on their own resources.

The address precipitated a warm discussion, and such was the eagerness of the members to debate with Mr. Babson on the points he had raised that for the first time in its history the club prolonged its Saturday meeting long after the usual hour for adjournment.

Prof. H. W. Tyler of M. I. T., John Graham Brooks, Henry Turner Bailey, Edwin D. Mead, Frank B. Sanborn and many others also spoke on the subject.

A clipping from the *New Bedford Times* tells us that Joe Riley has been employed by the city to inspect its auto fire engine. Thus it seems that he not only trains Tech students but he sometimes jumps into the thick of practical problems himself.—In the December *Electrical World* we find the report of a paper on "The Physics of Lighting" read before the Pittsburgh section of the Illuminating Engineering Society by Dean F. L. Bishop of the University of Pittsburgh.—Abram French is doing a general contracting business including structural cement work in the district north of Boston.—George Cottle dropped in on the secretary the other day and reports himself as president of the A. A. Wire Company, Inc., which is located in Newark, N. J. Cottle was for a long time with the New York Insulated Wire Company of Wallingford, Conn., but recently saw a favorable opportunity to launch this new company. He has more business than he can handle; and he attributes it to the beneficial working of the Sherman Law that a new concern such as his can start in and do a successful business in competition with the large and well-established concerns in the same line.

Pillsbury is major in the corps of engineers of the United States Army. His address is Washington, D. C.—Winthrop B. Wood is assistant chief engineer of the Joseph Bancroft and Sons Company, Wilmington, Del.—Lansingh is manager of the Holophane Works of the General Electric Company, Cleveland, Ohio.—Tietig is now of the firm of Tietig and Lee, architects, Cincinnati.—Dave Fenner is sales manager, truck department, United States Motor Company, New York City.—R. M. Hughes, Course V, has recently been elected president of Miami University. Thus Course V, '98, can boast two college presidents to add to the long list of Technology chemists who have achieved similar honors. It will be remembered that ex-President Eliot of Harvard was once professor of chemistry at Tech.—Tobey is in charge of the imports of the Pacific Commercial Company of Manila, P. I., but he is not located in Manila, only in New York City.—Lacy is a partner of D. L. Taylor and Company, general contractors, who have a section of the New York State Barge Canal work near Plattsburg.—E. M. Taylor is works manager of the Poughkeepsie Glass Works and president of the Dolan Contracting Company of New York City.—Streng is consulting engineer of the Louisville (Kentucky) Gas and Electric Company.

The second annual convention of the Technology Clubs Associated will be an All-Technology reunion in Chicago on the Friday and Saturday, February 20–21, preceding Washington's birthday. Thus Sunday and Monday will be free for the return trip before business begins again on Tuesday. Prizes are to be awarded to the best represented classes. '98 has many live men in the West and there is no reason why we should not again win the first prize for the greatest number of men present.

1899.

W. MALCOLM CORSE, *Sec.*, 106 Morris Ave., Buffalo, N. Y.

The secretary's office is in receipt of the announcement of the marriage of Miss Jennette Stanwood Hooper to Arthur Burling Foote, on Thursday, October 23, in San Francisco, Cal.—The Empire Smelting Company of Depew, N. Y., announces that, after January 1, 1914, W. M. Corse will become associated with them in the capacity of general manager. Corse was formerly works manager of the Lumen Bearing Company, Buffalo, N. Y., and has been actively identified with non-ferrous alloy interests for over ten years. He is secretary of the American Institute of Metals.—

Reunion

Miles S. Sherrill has accepted the chairmanship of the local Boston committee that will have charge of the reunion affairs next June. He has been investigating the reunions of other classes and will be able to report something definite by the time the next REVIEW is published.

Every man that can possibly arrange, should be present for the three days of the reunion during the early part of June. Be sure to set aside that time for a trip to Boston. Notices of the progress of the arrangements will be sent out from time to time.

The secretary wishes to acknowledge the recept of notes of interest, and wishes to urge the various members of the class to send in anything that they think will be of interest to others who may read the REVIEW.

You are especially urged to read carefully the announcements of the Chicago committee relative to the meeting of the Technology Clubs Associated, to be held in that city, February 20–21, 1914.

We had a good attendance at the New York reunion last year, and should like very much to turn out an equally good or better one this year. Any of our men who can attend, I am sure will find that they will have a splendid time.

1900.

WILLIAM R. HURD, 2D. RICHARD WASTCOAT.
PERCY R. ZIEGLER.

INGERSOLL BOWDITCH, *Sec.*, 111 Devonshire Street, Boston, Mass.

The efficient (?) secretary of the famous class of 1900 (do not interpret this to mean that the secretary is famous) has put onto the shoulders of one of his subordinates the arduous labor of writing the class news, and on one who could only pull an L in any kind of English.

You have all heard of the old expression of getting blood from a stone, and it is about the same proposition trying to get news from

the various men. Some of them are always ready to help out, and about 75 per cent. of them would never hold a job as a reporter. So much for preliminaries.

On Oct. 27 the class had an informal dinner at the Technology Club, the following members being present:—Jennings, Bowditch, Burns, Wastcoat, Neall, Reardon, Warren, Emery, Richardson, Edson, Russell, Ashley, Remington, Briggs, Lawley, Wentworth.

The words usually used to describe such an occasion are "a very enjoyable evening was spent," but these words do not exactly describe it—rather we had a "—— good time."

Another class dinner was held December 8 at the Technology Club and 29 men showed up. This is the largest number that has appeared for many moons. With some of the men it was the first occasion of honoring the other men with their presence. Read over this list and you will see we pulled out some of the ones we thought were dead and buried. Howe, Hawley, Walworth, Jennings, Neall, Bowditch, Burns, Russell, Remington, Warren, Richardson, Beekman, Emery, Conant, F. N., Burnham, Davis, W. W., Brigham, Cutting, Leary, Osgood, I., Ashley, Ziegler, Fitch, Briggs, A. B., Reardon, Wastcoat, Allen, E. G., Wedlock, Edson.

After dinner the bunch adjourned to Trinity Alleys, and a red hot bowling match was pulled off. It goes without saying that the pin boys had an easy time.

The following is the schedule of class dinners for the remainder of the season; January 19, March 9, April 27. These dates are, however, subject to change.

George Archibald, in a letter enclosing $5.00 for the class book, wrote as follows:—

There is nothing new of interest to tell you about. The year has been very quiet here for us. Yesterday W. C. Tudbury came in and renewed old acquaintance. He is on his way to the Pacific coast and is anxious to obtain some work of an engineering nature preferably along industrial lines. He says he has had enough of railroad work which has kept him moving so many times that he has never been able to call any one place home.

Give my kind regards to all inquiring friends.

The following letter is headed Rev. George Crocker Gibbs, Tulsa, Oklahoma:—

There is still one way in which an M. I. T., Course I, man can still serve the Institute and his fellow graduates, that is a civil engineer, who has specialized in celestial engineering. For the first time in my ministry, a Tech man has asked me to marry him, and I am going to marry an '09 man out here in December. Sort of a Tech wedding.

There is a big field for good engineering in this country, it is a rapidly developing civilization, and everybody here wishes all the advantages of the effete east. I haven't heard of any graduates except an architect, in a professional capacity out here.

This town of Tulsa, where I have my headquarters, is now the first city in the State of Oklahoma, in point of increasing population and wealth and building. You don't all have to be parsons to be missionaries. Some good M. I. T. men can come out here and develop this country along architectural lines, and it needs some

of the kind they put out at Technology. And you can imagine there is room for civil engineers still, when a year ago, a certain man in the vicinity of a large town was debating as to whether he should be a candidate for the office of register of deeds or the superintendent of the water works. There is the whole field of road building opening up, the country is alive with motor cars, and there is not a good road in the country.

I find that, as a parson, the training I got at Technology has been the very best boost I could have had.

We really are glad to know that "Georgie" has improved wonderfully, for our best recollection of him was in the last year at school when he was doing a thesis in conjunction with our worthy secretary, and a corner of the drawing room on afternoons sounded like a scrap in "Krausmeyer's Alley." It has never yet been settled whether it was Georgie pushed Inkie into the pond or Inkie pushed Georgie. The only thing that we know is that they came home from a surveying trip looking like drowned rats.—W. C. Dean (VI) has recently been engaged in a complete revision of the "General Specifications for Electrical Appliances on Shipboard No. 17A3" issued by the Navy Department. The above was made necessary by reason of advancement in the art. Dean must have had some job.

The following is from another member of the exclusive Washington set, B. R. Johnson:—

After leaving Tech I came down to Washington where I spent some five years as an examiner in the U. S. Patent Office, and where, since resigning my position with the government, I have remained as a member of the firm of Robertson & Johnson practising patent and trade-mark law with offices at 605 7th St., N. W.

I am a member of the University Club of Washington and also of the University Club of New York. I belong to the Church of the Covenant and am vitally interested in foreign missions particularly in China, all of which I fear is of interest only to myself.

—Wyman (XIII) recently had the honor of winning the first prize in an essay contest, held by the *Scientific American*, subject being "The Selection of the Ten Greatest Inventions in the Last Twenty-five Years, and the Reasons for Selecting Them." This essay appeared in the issue of the first week in November. It also added $150 to his bank account. Wyman was always noted for his command of the English language, and he certainly manipulated it in great shape in this instance. It is well worth reading.—Adams at the Experimental Station at Lawrence, Mass., states he has enough research work outside of the regular routine to keep it from becoming monotonous.—Burns, with office at 29 Central St., Boston, has been a member of the General Court for 1911, 1912, and 1913. He was one of the four Tech men in the Legislature when the Tech bill seeking a larger state allotment was up for consideration. Burns also says he knows the secretary of the class is getting too much "salary". Glad to see he believes in economizing.—D. E. Maxfield (II) says he is busy at the Florence Iron Works, at Florence, N. J., making cast iron pipe fittings, valves

and hydrants. They employ about 900 men. Melt about 350 tons a day. Says he is lonesome, and would like to have some of the boys call on him.—Moody of Bath, Me. (XIII), made famous as a naval architect by the *Boston Sunday Herald* while in his Junior Year at school offers the following:

I have merely gotten into the rut and go the daily round of eating, sleeping and earning my living.

It would give me great pleasure to be able to recount great scientific discoveries, and important positions held by myself, but not being Dr. Cook, I feel that I must refrain. I have joined the National Guard Company here in the heavy artillery as second lieutenant, acting as range officer, and that is all that I can do for you.

—C. F. Suhr, Waterbury, Conn., is also lonesome:

I am still with the American Brass Company, as engineer, in charge of the power division. We have just moved into our new general office building opposite the Union Station, and greatly enjoy our new quarters which are ideal in every respect. If any of my classmates come to Waterbury I wish to extend to them a hearty invitation to come in and see me to talk over the old and new times.

—The following from A. S. Merrill is too good to keep, even if it is a joke on a poor stenographer:—

Your stenographer hits the keynote to my remarks when she writes "Mear Merrill," only "mere Merrill" is more nearly correct. I was merely one in four hundred or so 1900 men and am still merely one of four thousand or so alumni. There have to be some merely members to offset the shining lights. Only a mere handful of classmates would likely remember me well enough now to be particularly interested in my prosaic career. For about two years I have been located in New York with a reinforced concrete company. My principal diversion is to visit the Technology club where I occasionally see Barney, Fitch, Macpherson, Hapgood and Chalmers. I also met Harps in town one day. None of these men had I seen in about twelve years. At the Thanksgiving dinner at the club, Barney had the distinction of being carver and acquitted himself with great credit. I perceive that the secretary's policy is to mention every member of the class once a year, on the principle that so many country papers are run, there being a supposition that everyone likes to see his name in print and incidentally it helps the circulation. So when in the rotation you come down to my name it will be enough to say "merely heard from" if you won't pass me up altogether.

—H. E. Osgood, '00, is chief engineer of the Norton Company, which has plants at Worcester, Mass., Niagara Falls, N. Y., Chippewa, Ont., Canada, Bauxite, Ark., and a branch plant at Wesseling, Germany. This company manufactures two well-known artificial abrasives—alundum at the Niagara Falls plant and crystolon at the Chippewa plant. The main factories at Worcester are devoted to the manufacture of grinding wheels, sharpening stones, a full line of abrasive products and grinding machinery. At the Worcester plant is also made a line of alundum refractories. The remarkable development of the grinding field within a comparatively few years and the corresponding rapid growth of Norton manufacturing facilities, so that the Norton Company may maintain its place as one of the leaders in the manu-

facture of artificial abrasives and abrasive products, keeps Osgood hustling.

P.S. The following is not an afterthought, and by right it should be inserted after every paragraph:

A big meeting of the Technology Clubs Associated is going to be held in Chicago February 20 and 21.

This will be welcome news to all the men around Chicago and vicinity.

There will probably be a large number of the Easterners going West at that time to partake of some of the Chicago enthusiasm.

Make an effort to be present!

It is really pitiful the way the replies to our pleas for news are started. They all read something like this:

Sorry, but I can't think of a thing that will help you out; am still in a rut; nothing has happened to me, etc.

Even Thayer, located at Staten Island, says he is leading an uneventful existence. Listen to this:

Haven't met or heard from any of the fellows lately, and the only unusual event in my own placid and uneventful existence has been the breaking of an ankle which kept me hobbling about on crutches for a month. Good as ever again now. The way I got the break might serve as a warning to some of the fellows, though I am aware others don't need it. I got it while "passing" a baseball with my youngsters in the back yard on Sunday afternoon.

Keith (VI), writing from Columbus, Ohio:

Am as busy as the devil on an engineering job which covers the entire State of Ohio.

I have not been back to Chicago for six weeks and probably will be on the job here for ten months more.

Hope he gets the state straightened out.—Jim Batcheller writes that he is coming home about Christmas and hopes to attend the informal meetings of the class after that time. His address will be Mattapoisett, Mass.—Even Barney can't get out of the rut:

I am still keeping bachelor's hall at 70 Morningside Drive, New York, but about the first of April plan to move on board my boat for the summer. I now have the 70 footer *Antares*, a launch I designed for Alexander Stein in 1909 and purchased from his estate recently.

At present I am busy on plans of a 98 footer, a 70, one 53, and a 30 that are to be built near Boston, so my work will take me your way frequently.

—S. F. Gardner, another Washingtonian, a member of the Standard Engineering Company, engineers and contractors for power plant equipments, heating and ventilating systems, plumbing and gas piping, says his time is entirely taken up with mechanical equipment of buildings, and he knows no news. He would appreciate any of the class members calling on him, and he states that if they will that he will buy them a feed at the new University Club

—One of the most interesting letters that has been received comes from Everett. He is a division engineer for the highway department in the State of New Hampshire. We have traveled over the state roads in New Hampshire in an automobile, and they certainly have made good; for one will find up there some of the best gravel roads in the country:

It would be impossible for me to write anything that would be of interest to the class of 1900, especially about myself. However, the fact that I have changed my address may be sufficient reason for you to give me a line or two in your letter.

I am still building state roads in New Hampshire or rather rebuilding them. The approved methods of construction change so rapidly and the traffic is such that we no sooner complete a section of road, than we have to start in and resurface or rebuild wholly. We find, however, that outside of the compact sections of towns and cities that the gravel road is giving the best satisfaction. All through the central and northern section of the state we have built continuous sections of gravel road that are giving great satisfaction both to motor and team traffic.

Many think that to build a satisfactory gravel road it is necessary to have a gravel that has just the right proportion of metal and cementing qualities. We started out with just this idea in mind, with the result that we got very little road and what we did get cost nearly as much as macadam.

Today we are building gravel roads all over the state and I doubt very much if you can find any two sections where they are built in the same way, but by combining gravel and clay we can get good results in most all cases. If the gravel is poor and sandy we use more clay; if the soil is naturally heavy and the gravel contains a binder, we use a sand or stone sub-base, and so on by a process of combination we can get a result that will fit any condition that we may find.

You might ask what we would do if we did not have the clay. We have yet to find the section where we could not find either clay or hardpan. It is impossible sometimes to find any gravel but by a combination of clay and sand or hardpan and stone we can get the desired effect.

These roads are easily maintained. We estimate that a new gravel road will wear two years by a systematic dragging or honing after rains or showers. Then perhaps the third year we will give it a resurfacing coat of the same material it is made of. We can build these roads for about $4,000 per mile, maintain them for two years at a cost of $125 per mile, resurface them for $700 per mile.

I did not intend when I started this to give you a thesis on gravel roads but I talk it so much that it has become second nature to me.

I am living with my family at 56 Beacon St., Concord, N. H., and would be pleased to have any Tech men call and see me if they ever pass through this city.

—Our sympathy should be extended to Robert Hopkins, who is now very seriously ill at the home of his father O. M. Hopkins, at Geneseo, N. Y. He has a disease of the nerves underlying the skin. His recovery is not expected. We all hope, however, that he will be able to get the best of it.—Fitch has returned to Boston after being in New York for four years. He is now located at 131 State St., and has joined the ranks of the certified public accountants.—Thurber is still located at the Navy Yard in Brooklyn, and from the following letter he is trying to make fun of the temporary editor of this letter. He will stand for it, however, if it will only bring out news for the rest of us.

I am going to be decent enough to reply to your news-dunning letter—although I have nothing to give you in the line of news. Newspaper business is not in my line; I have never had experience in making up copy—and therefore I shall confine

myself strictly to facts. I am, however, fully in sympathy with your strenuous effort to obtain "stuff" at any price, and I can readily understand how a little hot air can be utilized by an enterprising president of a modern business concern who hasn't forgotten his principles of thermodynamics. For myself, I have to be constantly on my guard lest I lay myself open to the charge "Guilty of moral turpitude."

Now to be more serious, I'll give the news which I said I hadn't got: I stumbled on to Harry Harps here in Brooklyn the other day. He doesn't seem to have grown a day older since I saw him last at graduation. He has just returned from Portland, Oregon, and is to settle down in New York for awhile.

A letter from Cooke recently received tells briefly of the construction of the Pacific Terminal for the Panama Canal at Balboa, of which he has charge under Commissioner Rousseau. It is fast nearing completion, a ship repair plant, dry dock, piers, coaling plant, etc.—As for myself, there is nothing worth the telling.

—Wentworth lost his wife on November 24. It leaves him with a boy of eleven and a boy and girl of three. Wentworth has been one of our steady attendants, and rarely ever missed a class meeting or dinner. We extend to him our sympathy, and trust the burden he has to bear may be lightened in some unexpected way.—From Hinman:—

Things are going good in Chicago and building work is in steady progress. Marshall Field is putting up a big building in the downtown district, and Randolph Street, in front of the new structure settled about six feet one night, but no great harm done. Chicago has great possibilities of rivalling Palm Beach as a winter resort. Up to yesterday the kids were picking dandelions in the parks and trees were budding.

—From Charles, Course I:—"I am down in New Bedford, Mass., assistant engineer on a sewage disposal system. I run across Jimmie Stetson occasionally. He is working for the Gas Company here. I see very little of the rest of the crowd nowadays. I attended a dinner at the City Club in Boston on November 29, where there was a good proportion of the Tech men. Of the forty-three who sat at the table there were only five who were not employed on city or state work. It is surprising how few engineers are employed in work not connected with the government."

Some day 1900 may have among its members a famous writer of fiction rivalling the ancient ones. How is the following for a starter from McAusland:—

Thanks for your invitation to mention myself and perchance break into print.

I run a morgue—and I assert proudly that there is not a dead one in it. Some undertaking. Said morgue has trimmings and is officially entitled "library."

Remember, you incited me to this.

Located in Chicago too.—A doer of things in this busy world and interesting too. Read this from S. W. Jones:

The difficulty in securing news items is, I think, due to the fact that talking about one's achievements seems a little like blowing one's own horn. I feel that way now, but here goes:—I am a member of the firm of Palmer, Hornbostel & Jones.

I am the director of the Architects' Bureau of Technical Service, an institution founded by me to satisfy the architects' demand for information on building mate-

rials, equipment and devices. The bureau collects, assimilates and formulates data and distributes it to the profession in the form of standard specifications. The bureau has received the recognition of the American Institute of Architects, as a greatly needed and valuable adjunct of the profession.

I am also deeply interested in the movement to establish the system of estimating on bills of quantities. My activities in this connection led to my appointment as chairman of the special committee of the American Institute of Architects on quantity estimating. My article on this subject published in the October *Brickbuilder* has precipitated wide discussion and much favorable comment.

From Stratton, at the office of superintendent of construction, U. S. Post Office, Owatonna, Minn.:—

Your pathetic appeal was forwarded to me here. Sorry I can not give you some real news, but about all I know is my transfer to this building October 25. We've been having summer weather up here ever since, in spite of the map. I do not remember seeing "Dutch" Sanders' marriage announced in the REVIEW. It happened on July 5, at Buffalo, and Mrs. Sanders used to be Miss Alta Louise Morgan. For further particulars you will have to see Sanders, and he is about the most uncommunicative rascal I know.

—H. M. Flanders, roadmaster of the Springfield (Mass.) Street Ry., has been appointed engineer of maintenance-of-way of the Springfield Street Ry., the Worcester Consolidated Street Ry., the Milford, Attleboro & Woonsocket Ry., and the Attleboro Branch R. R.

Address Changes

Raymond D. Borden, 29 Bedford St., Fall River, Mass.—Prof. Henry M. Brock, Boston College, 761 Harrison Ave.—H. W. Oxnard, Box 166, Topeka, Kans.—Edward R. Robson, Glacier Hotel, Glacier, B. C., Can.—Charles H. Stratton, 345 E. Vine St., Owatonna, Minn.—C. M. Hapgood, 129 Grove St., Montclair, N. J.—H. M. Harps, Nantucket, Mass.—Marcy L. Sperry, Care of Stone & Webster, 147 Milk St., Boston, Mass.

1901.

ROBERT L. WILLIAMS, *Sec.*, 8 Lake Street, Brighton, Mass.

Be sure to remember the meeting of the Technology Clubs Associated in Chicago, February 20 and 21, 1913, and attend without fail. It is going to be a big affair and is the first chance we have had to get together in the west in a large way since graduation.

The secretary recently received the following interesting letter from F. S. Clapp:

You may be interested to have for the TECHNOLOGY REVIEW some notice of my whereabouts, and I am, therefore, writing to say that I have been absent the past summer in Hungary, when, in addition to a visit at Budapest, a number of weeks were spent in Transylvania, not far from the Roumanian border. The trip was a business one to investigate the natural gas fields of that country for European interests.

The Associated Geological Engineers, which was organized by myself and M. L. Fuller, '96, about two years ago, is in a very flourishing condition and our staff is

now composed of five permanent geologists in addition to temporary associates at various times. During the past year, in addition to that in Hungary, we have been conducting geological work in Mexico, the West Indies, New Brunswick, Alberta, Ontario and many places in the United States.

The Hungary trip referred to was a very pleasant one, giving an opportunity of meeting many prominent Hungarians and also of seeing all aspects of Hungarian life, and traveling 3,000 miles through that country, by automobile. In addition to traveling through the gas fields, we visited some of the largest salt mines.

John R. Brownell is safety inspector for the Pennsylvania Steel Company. His work includes all matters pertaining to the safeguarding of all equipment, machinery, etc., for the plant which has an average daily employment of over 6,000 men. He also keeps records of all accidents to the men. He writes in part:

The only other '01 man in these parts is E. L. Chapman, who has been with the bridge and construction department of this company ever since leaving the 'Stute. The present month will complete the twelfth year of my residence in Harrisburg and Steelton. Up to March, 1911, I was connected with the chief engineer's department, beginning as transitman and latterly becoming superintendent of construction work in the plant itself. This included all track layouts, we having over forty-eight miles of track within the limits of our works.

John A. Trott is office manager of the print works department of the Pacific Mills, Lawrence, Mass.—Frank D. Rash as vice-president and general manager of the St. Bernard Mining Company is in charge of the operating department of said company which is the largest coal producing company in Kentucky, the output for 1912 being over one million tons. In April he read a paper on "What is necessary to the proper development of the Kentucky coal fields," before the Kentucky Manufacturers Association in Louisville, Ky. As president he presided over the annual meeting of the Kentucky Mining Institute, held in Lexington, Ky., on May 16 and 17.—George A. Clark is superintendent of construction of public buildings, supervising architect's office, Franklin, Louisiana.—During the past year Albert F. Sulzer took a trip to Europe, visiting London, Paris, Munich, Vienna, Venice and Switzerland. He is superintendent of the chemical plant for Kodak Park Works, Eastman Kodak Company, Rochester, N. Y.—Anthony W. Peters, having finished the construction of a sewerage system for the city of Moundsville, West Virginia, has gone to Utica, New York, where he is with the Consolidated Water Company of Utica in charge of construction of additional supply mains and reservoir.—Solon J. Stone is manager of the New York office of the Lackawanna Bridge Company.—Robert B. Morton is assistant engineer with L. B. Stillwell, consulting engineer, New York City.—The following recent address changes have been received: Perkins Boynton, 257 Fair St., Paterson, N. J.—Alfonso Madero, care of E. W. Knight, Hill Crest Farm, San Antonio, Tex.—Salvador Madero, Hill Crest Farm, San Antonio, Tex.—T. F. E. Reardon, 117 N. Common St., West Lynn, Mass.—A. H.

Wilson, 21 Butler St., Lawrence, Mass.—H. I. Wood, 321 Hillside Ave., Nutting, N. J.—H. W. Maxson, Tech Club, 17 Gramercy Park, New York City.—George T. Wilson, 138 Collins Road, Waban, Mass.—Harry E. Dart, Hartford Steam Boiler Inspection and Insurance Company, Hartford, Conn.—A. J. Eveland, 42 Broadway, New York, N. Y.—J. E. Ober, 5800 Elsworth Ave., Pittsburgh, Pa.—C. F. F. Campbell, 911 Franklin Ave., Columbus, Ohio.—Ralph Whitman, U. S. Naval Academy, Annapolis, Md.

1902.

F. H. HUNTER, *Sec.*, 281 Park Street, West Roxbury, Mass.
J. ALBERT ROBINSON, *Asst. Sec.*, care Underwriters' Bureau of New England, 141 Milk Street, Boston, Mass.

We take the following from the *Engineering News* of Dec. 18: "H. A. Everett, assistant professor of marine engineering, at the Massachusetts Institute of Technology, offered a paper on the 'Stability of Lifeboats,' which represented the results of inclining experiments and subsequent stability calculations upon four types of 28-ft. lifeboats: first, standard metallic; second, standard wooden; third, metallic; and fourth, collapsible wooden. The tests on the collapsible boat were not reassuring to those who believe in this type as, even in an unloaded condition, water leaked into the pontoons or chambers between the decks. Of course, in any wooden boat, subject to the weather and wear of service, leakage is bound to occur; but when such leakage occurs in a space where bailing is impossible, the stability and buoyancy are seriously impaired."

1903.

MYRON H. CLARK, *Sec.*, 43 Glen Rock Circle, Malden, Mass.
R. H. NUTTER, *Asst. Sec.*, Box 272, Lynn, Mass.

Fred Olmstead has just been spending a few weeks in the vicinity of Boston on business.—Mrs. Mary L. Weatherston announces the engagement of her daughter, Miss Leslie Weatherston, to Albert Adams Haskell of Essex, Mass.

The following address changes for mail have been received: Sidney Y. Ball, Norris Allister-Ball Co., Heyworth Building, Chicago, Ill.—Prof. Durward Copeland, Campania Estanifera De Llallagua-Llallagua, Bolivia, So. America.—F. D. Hayden, 1114 Marion St., Seattle, Wash.—Philip J. Kearny, 254 Huguenot St., New Rochelle, N. Y.—Prof. Laura M. Lundin, Wheaton College, Norton, Mass.—R. F. Manahan, 709 Mills Building, El Paso, Texas.—Samuel G. Porter, Holly, Col.—Walter R. McCornack, care of Guy Lowell, 1128 Tremont St., Boston, Mass.

1904.

HENRY W. STEVENS, *Sec.*, 39 Boylston Street, Boston, Mass.
AMASA M. HOLCOMBE, '04, *Asst. Sec.*, 510 Pine Street, St. Louis, Mo.

George E. Willcomb, chemist in charge of the Albany Filtration Works, has become associated with the engineering firm of Vrooman & Perry of Gloversville, N. Y. After graduation he was for short periods with Hazen & Whipple, consulting engineers, with Hering & Fuller, consulting engineers, and at the sewage testing station at Columbus, Ohio. For a year he was superintendent of filtration for the Department of Water Supply, Watertown, N. Y., and since 1906 he has been chemist at the Albany works. He has also served as chemical engineer for several cities and manufacturing plants on problems of water purification, disinfection and softening.

1905.

GROSVENOR D'W. MARCY, *Sec.*, 246 Summer Street, Boston, Mass.

The secretary acknowledges the receipt of the following:

Sara A. uda. de Noriega
participa a Ud. el enlace de su hija
Angelica
con el Senor
John T. Glidden
Cerro de Pasco, Octobre 4 *de* 1913.

From this we understand that our old friend John Glidden has joined the happy ranks of the married men.—Miss Lucy Carline Loveys and George Merrill Bartlett were married on Wednesday, October 29, at West Somerville, Mass. They will be at home after December 1 at "The Robeson," Camden, N. J.—Leonard Bushnell writes:—

I was glad to get your letter as it crystallized my long-desired determination to drop you a line.

The most important event in these parts lately was the arrival on September 27 of Eleanor Bushnell. She is my first, but exhibits none of those flaws which generally characterize amateur productions. Being of an indolent nature, I do not write any letters, but I assure you I have never weakened in my loyalty to the best school of all, and 1905, the best class. The farther away I get, the more I appreciate the value of the Tech idea and discipline, though it was not always agreeable at the time. We have a fairly active organization of Tech men here, and with Jo Daniels as secretary, I know it will now be much stronger. I have been out here six years now without going farther east than Salt Lake. At first, I pined for Boston, but am now a confirmed Puget Sounder. I do hope to get back sometime and mingle with the boys again. In the meantime, please assure them that my affection for them grows but stronger with time and distance, and I hope they have not entirely forgotten me.

Charlie Clapp reports the birth of Michael Manson Clapp in October. Charlie is located at the University of Arizona, Tucson,

Ariz.—The last '05 news reports George Thomas on Glasgow Bridge without information as to whether he was coming or going. The following letter from Podolsk, Russia, explains the matter:—

News is hard to find over here; for there isn't any. I am still with the Singer Manufacturing Company, and for the present am located in the little town of Podolsk, some thirty miles from Moscow. Our company has a large factory here and it is by far the most interesting proposition I have seen since leaving school. Our workers look like farmers and dress like farmers. The men come to work dressed like comic opera Russian peasants,—high boots, tunic, fur hat and wide belt. The women wear the same kind of boots as the men, and more or less other clothes. They have not acquired the gum-chewing or corset-wearing habit of the factory girls of the eastern parts of the States, and many of them sit at their work with a shawl wrapped once around their heads and two or three times around their necks.

There are a number of highly educated, well-trained Russian engineers in the employ of the company here, and the one thing which has struck me with the greatest force is their acquaintance with modern languages. Every man here who has any education at all speaks German, many of them speak French as well, and a few speak a little English. Imagine if you can, having a man try to converse with you first in Russian, then successively in German and French, and then, after a suggestive shrug of his shoulders, in English, which if not classical, is at least understandable. My family (we have a boy and a girl now) is still located at Bridgeport, Conn., and I am in hopes of getting away from here in time to spend Christmas at home. If there is an M. I. T. man within a day's journey of this place, I should be glad to look him up.

George got home for Christmas and took in the alumni dinner, before returning to Russia.

Fred Carhart has long promised to send a little account of himself, and we finally have a letter from him under a very neat letter head reading "F. M. Carhart, Civil, Hydraulic and Irrigation Engineer." He says:—

There is only one '05 man here besides myself, *i.e.*, Jackson, V, who is state chemist located at Boise. From all accounts he is doing well. I see Haven Sawyer, II '99, also Ethelridge Walker, III '99, here occasionally. Sawyer is located here, more or less, and Walker is at Idaho City, a place about forty miles from here, and only available by stage. G. W. Bliss, '97, and C. H. Paul, '95, both Course I, are with the Reclamation Service. Bliss is the project manager of the Boise Project, and Paul is the engineer in charge of the construction of the Arrow Rock dam, about twenty-two miles from here. I also see Lyman, I '04, on the street occasionally. As for myself, I severed my connections with the state last spring, and am now a free lance.

The following comes in from John Damon at Salt Lake City, Utah:—

Your persistent appeals for news of the class of 1905 ought to get some results, but the fact is I don't know about any '05 men except myself, and am waiting to see the news you gather. While in touch with a dozen or so Tech men, none of them are from our class. I have been with the Utah Power & Light Company since April, working on the engineering for the 130,000-volt transmission system which they are putting in to bring power from Grace, Idaho, to Salt Lake, and distribute it at 44,000 volts. The substation and distributing center with synchronous condenser for regulation of voltage has been my chief interest. There is a good Technology association in Salt Lake, and quite a number of Tech men doing things in this neck of the woods.

A glance at the front of the TECHNOLOGY REVIEW reveals the interesting fact that seven '05 men are active as officers in the local alumni associations. This bears out the belief that wherever you find an '05 man you will find an active and loyal Technology man. H. M. Cowper is secretary of the Technology Club of Buffalo; George B. Jones is secretary of the Northwestern Association of the M. I. T., and associate secretary of The Technology Clubs Associated; Preston Morris-Smith, or plain "Pret" Smith, is secretary of the Detroit Technology Association; Robert S. Beard is secretary-treasurer of the Southwestern Association of M. I. T.; Mitchell Mackie is secretary of the Technology Club of Milwuakee; Joseph Daniels is secretary of the Technology Club of Puget Sound; Andrew Fisher is representative to the Alumni Council from the Technology Club of New Hampshire; Eugene Kriegsman is president of the Technology Association of Northern California. Kriegsman sends in the following letter full of newsy items:—

It is indeed a long time since I have written you. Today my friends are helping me celebrate my birthday and it is the occasion of considerable revelry and retrospection . No there is no family as yet, I am still an "old bach." During the last four years, I have been very busy as an assistant engineer in the office of the city engineer, and during that time I have engineered the construction of about $1,000,000 of sewers and high pressure pipe laying in the congested parts of San Francisco. Not very long ago, I received a furlough to take the professorship of engineering at the University of St. Ignatius in the city here, and it is my business to build up an engineering college for them. So far I have been successful in the undertaking and the venture promises to be interesting in every detail. The Tech men have a strong organization on the Coast here, and I was elected president of the association for this year. We are making preparations to receive the Tech men here properly during the time of the great Exposition in 1915. If you have followed the *Engineering Record*, you will have seen several articles written by me.

I want to say a few words about some of the other fellows who are doing things here on the Coast. C. R. Adams, after working seven or eight years for the government, gave up his position to take the position of chief engineer for the Miller & Lux Company. This is a $50,000,000-corporation engaged in the land, stock and grain business in this part of the country. The original engineering corps was six men. Adams immediately multiplied this force by ten and organized it. Not long ago, I visited the office, and was assured by a friend of mine and a director for the corporation that "he would do. We like the way he goes after things," he said. *Hurrah for Adams.*

Now there is F. M. Eaton. You will notice his name at the top of this sheet. Eaton was chemist for the People's Water Company in Oakland when the panic came in 1908. The water company could not sell its bonds and expense was cut everywhere. The appropriation for the laboratory was cut off. This did not faze Eaton, however. He got busy and enlisted the assistance of the bacteriologist, B. G. Philbrick, also a Tech man, and bought out the whole laboratory and moved it to San Francisco. Being without a job, Eaton just made a new one for himself. Later I became interested in the laboratory also. The venture has proved a success, and you should watch the laboratory grow.

Then there was O. C. Merrill. The same circumstances which deprived Eaton of his job as an ordinary chemist for the water company likewise separated Merrill from the payroll of the same concern. Merrill did not like being an obscure assistant engineer out of a job. Not Merrill! He wanted something worth while, so he dug around and pestered the government until they made him chief engineer of the Forestry Bureau with headquarters in S. F. Today he has his headquarters in D. C. and to all events the Democrats want to keep him. Norman Lombard,

once our class president, is now the president of a corporation which deals in loans to agricultural projects. I think he got the habit at Tech in years gone by. Lombard says he is too busy to write, and I think that is the truth from the appearance of his office. There are several other of our classmates in the vicinity from whom I have not heard lately, but I hope to have some news for you soon. There is Fred Fraser, who did not stay the course out at Tech. He came West, finished at Stanford in Law, and finally went into the furniture business. After several small starts, Fraser decided to do the thing up right, so he went over to Alameda and started a big store. Everyone in Alameda knows Fraser now. I am glad to hear that the other fellows are doing well, and hope that they will continue to keep up the good work of the class as the fellows in this part of the country have. Give my best regards to everyone.

Norman Lombard writes:—

I am too far away from the Hub to have much of a peg to hang my hat of loyalty to Technology. I haven't seen an '05 man in many moons, but had the pleasure of having "Dave" Field, '04, to dinner recently. He is living in Seattle, is doing well and has a daughter of which he is inordinately proud, evidencing his pride continually, instead of hiding it, as I do my pride in my three-year-old son. You may be interested in the enclosed outline of the company I have been organzing for a year. Give my regards to all the fellows.

The company of which Norman is the secretary and treasurer is the Agricultural Credit Corporation of California. It has an imposing list of names for the board of directors, and is organized for the purpose of making long-time loans to California farmers at reasonable rates of interest, and is one of the modern efforts to improve agricultural credit conditions.—Bobby Lord writes that news is scarce in Maine. Phil Hinkley is the only '05 man in his immediate vicinity. Hinkley had just come back from a trip in the woods after deer. Hub Kenway and his wife made Bob a call on their way home from their vacation. Zeke Coffin stops in now and then on his trips. The last time he was there they drove to Dundee Falls to see the work on the new dam Stone & Webster are building for S. D. Warren & Company. The power house did not look more than half finished, and it hardly seemed possible they could start the following Tuesday as they were going to do, and as they did.—Charlie Johnston reports the death of their little boy, whose birth was mentioned in the last number of the REVIEW. We can assure him and his wife of the sympathy of all his classmates. Charlie is now with the Butte & Superior Copper Company at Butte, Montana, and writes that Lloyd Buell is still in Butte with the North Butte Company and that he often sees him evenings. Bill Motter is still with the same iron company in Canada, and says that Sam Seaver sometimes drops in to see him.—Will Greene was East for a few days in October, but, as it was simply a hasty trip for a session with the oculist, he saw little of the world and few '05 men during his absence from the Diamond Match Company of Barberton, Ohio.—H. Louis Jackson writes:—

It may be news that I have changed my habitation, but not my occupation of guardian to the public's stomach. I am state chemist located at Boise, Idaho,

and looking after the food, drugs, water and milk of this state, as well as the tar they put in some of the roads. Am just back from a trip to Washington where I attended three conventions.

Jim Barnes writes that the local alumni association around Syracuse is very inactive, and that he has little information about '05 men on hand. He sees Chesterman occasionally, who is plant superintendent of the Central New York Telephone Company. Barnes has recently been elected president of the Technology Club of Syracuse, which has nothing to do with the M. I. T., but is a local club of engineers, architects, and technical men of all sorts to work in connection with the Chamber of Commerce in all matters requiring engineering or technical advice, and endeavor to maintain the highest possible ethics in the technical profession in those parts. Barnes has also been elected to the executive committee of the New York State Electric Railway Association and of the American Electric Railway Engineering Association.—Everett F. Tomlinson is a member of the firm of Wilson & Tomlinson, who, as building contractors, have been doing some interesting and important work in and around Boston. Tomlinson recently had a letter from Walter Chadbourne who started out with '05, but graduated with '06. It seems Chadbourne came to Boston and bought an automobile, and drove it home to Brooklyn, although he was not an especially experienced chauffeur. He says:—

Up to date I have bought three new tires, four new inner tubes, had ten or twelve punctures, put the transmission on the blink, and very nearly got drowned in the broad Atlantic. The engine and paint, for the most part, is intact. Despite such trivial mishaps, I am convinced that mine is the only car, and if chance or evil intent ever brings you to this little village, I should be pleased to demonstrate the same to you in person. I find that automobile ownership and high social standing are synonymous, leastwise in the petticoat sense. I am getting so popular that I am seriously considering buying gasoline in carload lots. Due to the price of tires, I am setting my social limit at 140 pounders. I am fully cognizant of the comfort and luxury that goes with 180 pounds or more, well distributed, but I simply can't afford it. Besides, I have the fragile New York roads to consider.

I haven't seen our mutual friend Bobby Seyms since I returned, but hope to get in touch with him soon.

If you know of any sweet and charming young blonde well within the limit, telegraph when she quits works, and I will try to be at the corner waiting for her in my gasoline joy cart.

—Joe Baker is located at 4633 Franklin Ave., Los Angeles, Cal., as Pacific Coast manager for Richardson & Boynton Company.—Bob Turner, who, as mentioned in the last REVIEW, was acting deputy commissioner of labor for the State of Massachusetts, has been appointed commissioner of labor, by the governor of the Commonwealth.—The secretary had a Christmas card from Roy Allen, which brought the good news that he is safely out of Mexico, and established for the winter at least, at 64 North 9th St., Newark, N. J. We understand he expects to keep busy in New York awaiting developments in Mexico.—George Jones is very active

as local secretary on the job for the big February reunion in Chicago, and is anxious to have enough '05 men there to make it worth while to get up some special stunt. He writes as follows:—

There will probably be a prize offered for the class having the largest attendance, and '05 ought to go after it hard. We '05 men have been away from the Institute about long enough now, so that we should take advantage of every opportunity to renew our interest in Tech affairs. This is particularly true as we will have our big ten-year reunion in 1915, and in order to get in a proper frame of mind, we should attend the Chicago reunion by way of a dress rehearsal.

The '05 men are in a position to do good work in connection with this reunion. They seem to have an unusual opportunity to influence the local associations in the right direction. You will notice, for example, from the TECHNOLOGY REVIEW, that the secretaries of a number of the local alumni associations are '05 men.

I can assure all the boys that they will be very well taken care of, and that the executive committee, which is made up of all the past presidents of the Northwestern Association, has resolved "to do the job right." I want to get a line on some energetic '05 men in every large city to canvass the local crowd to get as many as possible to agree to come to Chicago. We will make arrangements so that a great many of the men can be put up at some of the local clubs, which are as fine as anything in the country and which have facilities for a good time, better than the best hotels, and the rates are more reasonable than the usual hotel rates.

The city fathers of Providence have secured the expert advice of Selskar M. Gunn to aid them in remedying the local health situation. An interesting account of his recommendations to the City Health Department appeared in the *Tribune*, December 7:

Radical changes in the conduct of the various branches of the city's health department will be recommended to the City Council as a result of an extended investigation into the present system by a committee of the Pawtucket Business Men's Association, assisted by Prof. Selskar M. Gunn of the Massachusetts Institute of Technology and an expert on such matters. It is expected that the findings of the business men's committee and their recommendations will be forwarded to the Council for its meeting the coming week in hopes that something in the way of changes may be accomplished during the new year.

In brief, Prof. Gunn advises the employment of a superintendent of health who shall put his entire time into his position and be adequately paid for the same; that three sanitary inspectors on full time supplant the one in employment by the city at present, recommends an improved system and equipment for milk inspection and the centralizing of all health work in the department. The changes he would have the city adopt would cost something over $15,000 per year, against $5,000 at present.

James E. Barlow, lately chief assistant engineer of the city of Cincinnati has been appointed director of service under the new city government of the city of Dayton, Ohio. Newspaper clipping notes this as follows:—

James E. Barlow, new director of service of the Gem City, graduated in 1905 from the Massachusetts Institute of Technology. He was associated as engineer with the Metropolitan Water Board of Boston, the Charles River Basin Commission and the N. Y. Board of Water Supply. In 1909 he came to Cincinnati to aid the Bureau of Municipal Research.

Last July he was appointed chief assistant city engineer by City Engineer Waite. While in the city engineer's office, he principally had charge of the paving investigation and the street lighting departments. He is married and has a little daughter. His home is 6210 Ridge Avenue, Pleasant Ridge.

1907.

BRYANT NICHOLS, *Sec.*, 10 Grand View Road, Chelsea, Mass.
HAROLD S. WONSON, *Asst. Sec.*, 43 Ainsworth Street, Roslindale, Mass.

Informal Dinner

An informal dinner of members of the class in the vicinity of Boston was held on Saturday evening, December 13, at the Engineers Club, 2 Commonwealth Ave., Boston. Those present were:—Macomber, Lawrence Allen, Fred Morrill, "Tucky" Noyes, John Thomas, Harry Moody, John Mahar, G. E. Prouty, Harold Wonson, E. A. Miner, Prescott Nichols, Ed. Squire, Jim Barker, M. E. MacGregor, Walter Hoover, P. J. Colvin, "Kelly" Richards, Sam Coupal, Oscar Starkweather, Allen Pope, Hosmer, Bryant Nichols, and I. W. Litchfield, '85, as the guest of the class. Don Robbins arrived late in the evening. Bursar Rand, our honorary member, was unable to be present on account of being at Pinehurst, N. C., and by vote of those at the dinner the secretary sent him a telegram of greetings. There was no special entertainment provided. Macomber presided, and after lengthy remarks made in such language and in such style that Litchfield said he felt "fairly impaled on the shaft of oratory" which had just been delivered (these remarks, however, being frequently interrupted by "highly" entertaining exclamations from the assembled gentlemen, especially from Hosmer and Starkweather), the aforesaid Litchfield gave a very interesting talk. He threw much light on undergraduate doings and methods, and on present and future ideals and ideas pertaining to the Institute in its new location as well as in its present buildings. Lawrence Allen and the secretary, as well as Hosmer, the hero of the five-year reunion "badger fight," made brief remarks. Every man present had a thoroughly good time enjoying the good fellowship of his classmates. It was voted that another dinner be held in June, on the same night that the alumni celebration comes. During the gathering it was ascertained that thirteen of the twenty-two men present were not following the line of technical work for which they specially studied at the Institute and six of the twenty-two were engaged in purely business activity, doing no engineering work at all.

Miscellaneous Notes

E. L. Chaffee sends the following letter:

A few things have happened since I last wrote which may be interesting. Heretofore I have had one-year appointments here at Harvard as instructor in physics and electrical engineering. This last year I was made faculty instructor which means indefinite appointment.

Probably you have heard of the new high tension laboratory which is now under construction here at the university. It is of concrete internal construction, and is to contain two large transformers, together capable of giving 1,000,000 volts at

1000 kw., a large 100,000-volt storage battery and facilities for research. I am looking forward to the completion of the plant with views of getting into it.

You may remember that I spoke last time of a fool arrangement of mine which produced oscillations applicable to wireless telephony. It was my doctor's research and at the time brought me $200 and a bronze medal, known as the Bowdoin prize. This summer I was taken very much by surprise when, enjoying nature at Lake Sunapee, N. H., I received two registered packages, one a silver medal and the other a certificate, saying that the Franklin Institute of Philadelphia had awarded me the Edward Longstreet medal for that year for my contribution to science and useful arts. That was a darn fool thing for them to do. I felt quite flattered later when I found that Edison got it one year and J. Thomson another year.

The remaining bit of news is to me the best. It all happened this summer. I met a Miss Marie Kreutz at Lake Sunapee and we were married October 15 here in Cambridge. We are living at 32 Gurney St., Cambridge, so change my address to this. We should be glad to see any one of the class at any time.

John P. Chadwick left Mexico some time ago, and is now with the Braden Copper Company at Rancaqua, Chile, S. A.—P. L. Cumings has changed his address to 41 Atlantic Ave., Fitchburg, Mass.—George A. Crane, 210 Read Building, Montreal, Quebec.—Ralph Crosby has moved again, now living at 110 Gordon Ave., Syracuse, N. Y.—"Chick" Eaton, now a lieutenant in the ordnance branch of the regular army, is stationed at Rock Island Arsenal.—O. G. Fales, Recife, Pernambuco, Brazil, S. A.—Phil Greenwood is at Victor, N. Y.—Hosmer is now the proud father of Herbert Buttrick, Jr., born November 24, 1913. We wonder if he will be a "chip of the old block."—Frank F. Hutchings, care of Wiley & Russell, Greenfield, Mass.

From Clarence Howe:

On the 1st of June, 1913, I resigned my position at Dalhousie College and entered the service of the Board of Grain Commissioners for Canada as their chief engineer. These commissioners have charge of everything that has to do with handling of grain in Canada. They have charge of the transportation of grain, and regulate all the privately owned grain elevators in this country. In addition they are building a number of large terminal elevators, and I am working in this connection. We are building large elevators at the following points: Port Arthur, Saskatoon, Moose Jaw, Calgary, Vancouver, and Port Nelson on Hudson Bay.

I find the work exceedingly interesting, and you can imagine that it takes all my time and energy. However, I am getting together quite a large staff, and expect to get things organized before long, so that the work will not be so difficult, after which time I assure you that I intend taking more interest in the class affairs.

I meet a great many of our classmates in my trips around Canada. A few weeks ago I was in Ottawa in connection with the letting of a contract for one of these elevators and there met George Crane, whom I had not seen since we were graduated. He is chief estimator for the Canadian Fuller Company, and was there to submit a tender for the work in their behalf. Bob Thayer was also in Ottawa at the time, and we held a dinner to celebrate the reunion.

Sidney D. Wells, chemical engineer in forest products, U. S. Department of Agriculture presented a paper before the American Chemical Society at Rochester, N. Y. The subject was "Some Experiments on the Conversion of Longleaf Pine to Paper Pulp

by the Soda and Sulphate Processes." The article appeared later in the November issue of the *Journal of Industrial and Engineering Chemistry.*

Fred Morrill, 41 Batavia St., Boston, Mass.—George Norton is now a captain in the regular army, located at Rock Island Arsenal, Rock Island, Ill.—"Tucky" Noyes left the employ of the U. S. Navy Yard at Charlestown on December 13, 1913, and is now a sales engineer with the Spencer Turbine Cleaner Co. of Massachusetts, 128 Bedford St., Boston.—"Kelly" Richards became the father of Susan Parkman Richards on June 24, 1913.—Winslow Robinson, while still employed by the F. W. Dodge Company of Boston, is now living at 103 Sisson Ave., Hartford, Conn.—Don Robbins has left the employ of the W. H. McElwain Company, and is with Walter S. Barnes & Son, manufacturers of paper boxes, Boston. Don is living at 1665 Center St., Newton Highlands, Mass.—L. P. Russell, 27 Linnaean St., Cambridge, Mass.—John Rehn, of freshman tug-of-war fame, is temporarily located at 301 Goliod St., San Antonio, Texas. He has a daughter, Dorothy N., born November 19, 1913.—Theodore L. Smith of Richmond, Va., has a son, Stephen Lincoln, born October 25, 1913.—John Thomas, now a captain in the army, is stationed at Watertown Arsenal, Mass. John attended the recent class dinner and says he has an "Applied Lab." job, as he is in charge of the testing of materials at the arsenal. A daughter, Lillian Elizabeth, was born to John and Mrs. Thomas on May 26, 1913.—Harold S. Wilkins became an instructor at Phillips Andover Academy, Andover, Mass., last September. His address is 7 Day Hall, in Andover.

Charles Joseph Stevenson died on August 5, 1913. He was connected with '07 during our first two years at the Institute.

Men of '07! *You are Due in Chicago, February 20!*

What is going on? The big All-Technology Five-Year Reunion. It will be the best and biggest affair of its kind ever held by Technology men. A prize is offered to the class having the biggest attendance. Let us get after that prize! We have sixteen men who live in the immediate vicinity of Chicago. They will be on hand, of course. How about those in New York, Boston, Denver, Washington, and all the other towns and cities of the country? Class "boosters" have been appointed in the big centers of the country. Coöperate with them to put '07 at the top of the list in attendance and enthusiasm. For news direct from '07 men in Chicago write John M. Frank or Sam Marx.

1908.

RUDOLPH B. WEILER, *Sec.*, care The Sharples Separator Co., West Chester, Pa.

CHARLES W. WHITMORE, *Asst. Sec.*, 1553 Beacon Street, Brookline, Mass.

I. *On the part of the Secretaries.*

Notice.—Bi-monthly meetings held on the second Tuesday of the odd months at the Boston City Club at 6.30 p. m.

The twenty-third bi-monthly dinner was held at the Boston City Club November 11 at 6.30 p. m. R. J. Batchelder submitted his report as treasurer of the reunion committee as follows:

To R. B. Weiler (class treasurer)	$25.00
Receipts from men attending reunion	615.00
Photographer (2 trips in auto)	1.00
Raffle	3.00
Incidentals	2.50
Developing and printing	10.19
Receipts for album	100.00
Deficit	31.58
Total	$788.27

By Mrs. Francis P. Yeager (hotel)	$351.25
Cape Cod Auto Company	44.50
Capt. Brown (boat Sunday, June 15)	30.00
Small sail boats	10.00
Advertising (alumni office)	110.37
Andrew J. Lloyd (developing and printing)	20.94
Estabrook & Eaton (cigars, etc.)	11.25
Panorama view (for REVIEW)	1.00
Refund (Bentley $22.00, Leslie $4.00, Lyon $12.50)	38.50
Refund on auto, Drake $1, Collins $3	4.00
Fobs and badges	19.40
Bar bill	2.20
Hyannisport Golf Club (golf and tennis)	7.00
Incidentals	16.61
Albums, (reunion album)	18.45
Paper (reunion album)	1.25
Printing (reunion album)	72.92
Typewriting	28.63
Total	$788.27

The report was accepted and the secretary instructed to pay the deficit out of the class treasury. The reason for the deficit, amounting to $56.58, including the $25.00 advanced to the committee, was explained as follows:

From the indications as noted by the returns from the first notices sent out by the committee it seemed as though more than fifty fellows would be present—1907 had a total of over seventy—therefore a conservative estimate of the cost for fifty fellows was made and $125 to $150 was figured for advertising. Only a total

of thirty-six members came, which meant that the fixed charges, such as advertising, increased considerably per man. If forty-five men had attended there would have been a balance on hand.

In view of the fact that the fellows present at the reunion paid out a fair price and fully their share, or more, of the advertising which went to the whole class, it did not seem fair to assess those attending the reunion for any additional expense.

O. S. Lyon then showed a new envelope sealing machine and also a stamp affixer which he is placing on the market. Much interest was shown in these machines.

Following came a wild and exciting bowling match between the married men and the single men. As the former were able to have a full team with few single men to hold them down they easily won three straight strings.

Those present were: A. M. Cook, Lincoln Mayo, R. J. Batchelder, W. H. Toppan, W. E. Booth, S. C. Lyon, G. E. Freethy, O. S. Lyon, C. W. Whitmore, A. W. Heath, W. D. Ford, A. B. Appleton, W. E. Barton, H. S. Chandler, H. H. Damon, E. R. Smith, E. I. Wells, H. B. Luther, H. A. Cole, B. W. Cary, L. T. Collins, H. T. Gerrish.

James Allen Kane has opened offices at the Dime Savings Bank Building, under the firm name of Kane, Bates & Doughty for the general practice of architecture. Kane continued his studies in Paris and Rome after leaving the Institute. Since his return from Europe he has been with Messrs. Parker, Thomas & Rice of Boston and Baltimore, where during the last few years he has held the position of chief designer.

The class now has a member of the Faculty, E. I. Williams having that honor as associate professor of architecture. He is also connected with Mr. Boswell in the New Technology.

II. *Matrimonial.*

In the five years that we have been publishing notes in the REVIEW we have never yet had to go to press without some matrimonial news, which shows that we are *some class.*

We had a large crop of news under this caption in the November number which caused us to "Point with pride." Your secretary was beginning to think that "Pride goeth before a fall," as no matrimonial news had been received up to within a few days of going to press, when, happily, we received an unofficial notice that Franklin T. Towle and J. R. Thorndike enjoyed their honeymoons in November.

We are not in possession of any details.

Also announcement is made of the engagement of Miss Helen Warrington Gerrish of Melrose to Leslie B. Ellis.

III. *New Addresses.*

C. O. Brown, 30 Columbia Park, Haverhill, Mass.—Frank E. Belcher, 30 Nowell Road, Melrose Highlands, Mass.—Herbert A. Cole, New England Tel. & Tel. Co., Pittsfield, Mass.—M. B. Hall, 853 Goodfellow Ave., St. Louis, Mo.—S. Hall, 60 Lloyd St., Winchester, Mass.—Charles A. Edmunds, 725 E. Market St., Akron, Ohio.—C. W. Morrison, 80 Florence Ave., Revere, Mass. —J. Scott Macnutt, 254 Walnut St., Brookline, Mass.—Julian H. H. Harwood, Gold Run, Placer Co., Cal.—Arthur S. Douglass, 164 Harvard St., Brookline, Mass.—H. H. Damon, Malden, Mass.—Burkett S. Clayton, 105 Opera Block, Pueblo, Col.—H. H. Bentley, 1124 Monroe Bldg., Chicago, Ill.—Frank K. Belcher, 88 Summer St., Malden, Mass.—Donald Bowman, 28 N. Market St., Chicago, Ill.—B. G. Fogg, Milton, N. H.—F. J. Friedman, 357 St. Catherine St., W., Montreal, Que., Can.—G. T. Gambrill, Jr., 1706 Fourteenth Ave., S., Birmingham, Ala.—J. Scott Macnutt, care of Wells' Sons, 191 Ninth Ave. New York, N. Y.— Harold S. Osborne, care of Am. Tel. & Tel. Co., 15 Dey St., New York, N. Y.—Alec N. Penny, Utah Consolidated Mining Co., Bingham, Utah.—E. A. Plumer, Southern Bell Tel. & Tel. Co., Atlanta, Ga.—Harry F. Richardson, 985 Lincoln Place, Brooklyn, N. Y.—Willard F. Rockwell, 870 South St., Roslindale, Mass.— Max Rohde, Zearing, Ill.—J. B. Stewart, Jr., care of Mahoning & Shenango Ry. & Lt. Co., Youngstown, Ohio.—Freeman E. Towle, 91 Vernon St., Waltham, Mass.—Lester S. Weeks, Lake Ariguanbo Co., San Antonio De Los, Banos, Cuba.

1909.

CARL W. GRAM, *Sec.*, care Walter Baker & Co., Ltd., Milton, Mass.

A good many of the fellows are no doubt wondering about the time and place of our five-year reunion. The situation is this: when we have a reunion we are going to have a hummer. The big All-Technology reunion has been postponed for various reasons until 1915, and so contrary to our expectations, will not coincide with our class reunion. The change of year for the big reunions will in all probability be permanent, and they will hereafter be held in 1920, 1925, etc., instead of 14, 19 and 24. Inasmuch as there will be greatly reduced rates all over the country in 1915, and everyone will get so much more for his money, besides meeting friends and acquaintances in all the other classes, the secretary feels that it will be much better to wait until 1915, and celebrate our five-year reunion at that time. Let us hear from those of you, who have decided opinions one way or the other.

Lieut. D. P. Marvin of the United States Revenue Cutter *Androscoggin* will be located for about a month at the Charlestown Navy Yard, while his vessel is in dry dock. Marvin will be glad to see any of the fellows and you will sure have a good time.

On November 10 the newspapers printed the following:

The marriage of Miss Lottie Belle Cross of 14 Upton St., Boston, to Theodore F. Stark of Wakefield and New York, took place today at the home of the bride. The couple will reside in East Orange, N. J. Mr. Stark will continue his work in the office in New York of Guy Lowell, the architect. The bride was formerly Mr. Lowell's private secretary.

Announcements have been received of the following weddings: On October 26 at Trinity Church, Pittsburgh, Miss Maud Conrad, to Robert Mayro Keeney. Mr. and Mrs. Keeney are at home at the Moyer Apartments, Oakmont, Pa.—Miss Katherine Florence Chase to Carleton Waterbury Hubbard at Saylesville, R. I., on November 3.—Miss Marie Parker to John Stewart Pearce at Tulsa, Okla., on December 10.—Miss Eva Batchellor to Ernest M. Loring in Medford, Mass., on December 31.

Art Shaw became a father just one week ahead of Chet Pope. Richard Lassell Shaw, 6 pounds, 12 ounces, arrived on October 30 and Chester Henry Pope, Jr., 8½ pounds, on November 6.

J. N. Stephenson, instructor in the department of chemistry at the University of Maine took a party of students in chemical engineering to visit various manufacturing plants during the Christmas holidays. The secretary showed them what a real chocolate factory looks like from the roof to the basement.

It is with much regret that we have to report the death of Herbert Brown Winterstein, in May, 1913.

After the above letter was forwarded to the REVIEW, we learned of the exact dates for the annual meeting of the Technology Clubs Associated at Chicago. The second annual convention will be held in Chicago on February 20–21, 1914, Friday and Saturday preceding Washington's Birthday. These dates are a particularly happy choice as Washington's Birthday falling on Sunday, the legal holiday will be observed on Monday, thus giving plenty of time for a return trip. This meeting is much more central than the 1915 reunion, the attendance will be quite different, and neither will detract from the other.

Class boosters will be appointed in the various districts to round up the fellows.

The meeting in New York last year was a wonder. Chicago will go the limit to beat all past performances, but they want *your presence and support.*

Address Changes

Percival L. Adams, E. 17th and Center Sts., Portland, Ore.—Felix A. Burton, care of A. F. Menke, 303 Court House, Portland, Ore.—Kenneth E. Carpenter, 23 Ashton St., Pawtucket, R. I.—John F. Davis, P. O. Box 768, Kalamazoo, Mich.—Myron M. Davis, 244 Parkwood Blvd., Schenectady, N. Y., W. Craig Ferguson, Box 365, Walla Walla, Wash.—Mathews Fletcher, 814 Traction Term. Bldg., Indianapolis, Ind.—Marion H. Foss, Box

673, Bingham Canyon, Utah.—George H. Gray, University of Wisconsin, Madison, Wis.—Robert N. Hoyt, Wellesley Hills, Mass.—B. Edwin Hutchinson, Forrest Hills Inn, Forrest Hills, L. I., N. Y.—Barry H. Jones, Central Union Tel. Company, Indianapolis, Ind.—Mrs. Carroll Paul, The Clinton, S. Tenth and Clinton Streets, Philadelphia, Pa.—Morse W. Rew, City Hall—Eng. Dept. Cincinnati, Ohio.—Andrew L. Matte, 85 Edmund Place, Detroit, Mich.—Rudolph W. Riefkohl, 16 Exeter St., Boston, Mass.—Herman C. Schriefer, 225 Newbury St., Boston, Mass.—Frank W. Sharman, care of Stephen Child, Harmer Studios, Santa Barbara, Cal.

1910.

JOHN M. FITZWATER, *Sec.*, Ovid, N. Y.
G. BERGEN REYNOLDS, *Asst. Sec.*, 142 Highland Avenue, Somerville, Mass.

This winter the All-Technology reunion is to be held in Chicago, February 20 and 21, Friday and Saturday. The committee in charge of affairs promises "the best time ever." Consequently every 1910 man should begin to plan now to make it possible to be present at this occasion. The class of 1910 is making a fine name for itself, so much so, that it can not afford to slide backward at this time.

We have an item from *The Engineering and Mining Journal* of August 9, in which George E. Goodspeed is mentioned in connection with his work in the Oregon Agricultural College:

> The most recent and approved mining apparatus, designed after patterns now in use in the Massachusetts Institute of Technology, will be installed in the School of Mines Building, Oregon Agricultural College. Plans for this machinery were brought from Boston by George E. Goodspeed, Jr., instructor in mining at the college. The new machinery will be installed in sections, part being built during the summer so that mining students for the first semester may have the advantages derived from their use.

The secretary regrets very much to announce that Arthur P. Truette has passed away after being ill for several months. All who knew Truette will remember him as a fine, clean-cut, alert young fellow, who was always welcome wherever he was present.

1911.

ORVILLE B. DENISON, *Sec.*, Hotel Standish, Worcester, Mass.

☞ *Special Notice.*

The class of 1911 now meets for weekly luncheons on Wednesdays at one o'clock at the Quincy House on Brattle Street, Boston, Mass. Remember!

Although we are now in the heyday of good resolutions, effective January 1, 1914, it is barely possible that many of us have at this

early writing broken approximately 103.0 per cent. of said resolutions and gone back to our old mode of living. Such being the case we will let the matter drop and proceed to a résumé of past performances rather than future hopes.—As a result of a recent canvass of those members of the class from whom nothing has been heard since graduation and of those members who at one time or another have been affiliated with some class other than 1911, the secretary has been able to revise the class roll appreciably and it is now in fairly good condition. In order that this roll may be kept constantly up-to-the-minute, it is necessary for each and every member of the class to coöperate with the secretary and keep him informed of all address or business changes.—An item of interest which arrived just too late for insertion in the last bunch of notes should be recorded at once. On Tuesday, October 14, at Ipswich, Mass., Harold Gould Jenks was married to Miss Marion Perley. Congratulations!—Manifestations of the glad hand are also in order for James K. Campbell, the astute civil engineer, for on November 10, Jean Newbury Campbell appeared at the Campbell household in New York.—On Saturday evening, November 1, in the Union, the class held a very enjoyable dinner under the direction of Herb Fryer and Lloyd Cooley. Our old friend, Mr. Colten, the genial *maître d'hotel* of the popular student center, outdid himself in his efforts to please and served one of his finest epicurean treats. During the evening "Groucho" Fryer presented in tabloid form an outline of the life and "wonderful" achievements of the secretary—Mr. Orful Bilious Denison—and supplemented his discourse with some well-executed cartoons thrown upon the screen by means of a reflectoscope. The following men attended: S. M. Schmidt, G. W. True, Merton W. Hopkins, R. H. Ranger, Arthur F. Leary, Royal M. Barton, George C. Kenney, Suren Bogdasarian, G. Arthur Brown, Lloyd C. Cooley, Stafford A. Francis, Carl J. Sittinger, Oberlin S. Clark, John A. Herlihy, Charles A. J. McManus, William S. Burleigh, Donald N. Frazier, Kenneth W. Faunce, Raymond H. Lord, Herbert Fryer, Charles M. Barker and the secretary.—On October 28, Charlie Barker, alias Gutz, and the secretary held a smoker at their apartment at the Standish for the Worcester alumni of the Institute. The guests of the evening were Mr. Frederic H. Fay, '93, president of the Alumni Association, and Mr. I. W. Litchfield, '85, editor of the REVIEW. These two gentlemen told of the plans for the new Technology and present student affairs at the Institute. The following 1911 men were present: William S. Burleigh, George A. Litchfield, Royal M. Barton, Fred H. Daniels, James F. Duffy, Charles N. Barker and the secretary. In all, twenty-two attended.—Right here is a good place to remind everyone of the big Chicago reunion to be held in the Windy City, February 20 and 21. A special effort should be made by 1911 men to attend if possible, as a prize will doubtless be given for the class making the best attendance record. Details of the affair will be

found elsewhere in this issue of the REVIEW.—"Mike" Greenleaf has left Cleveland, and is now with Gray & Davis, Inc., in Minneapolis, Minn. Yimminy yee, he yumped his yob! He is engaged in the perfection of electric starting and lighting system for automobiles.—R. B. Wells, a former member, is now a high school mathematics instructor at Acton Ridge, Maine. He is living at East Wakefield, N. H., just over the line, however.—Three 1911 architects have formed a partnership with offices at 6 Beacon St., Boston. The firm is known as Simonds, MacNaughton & Robinson, the members being R. S. Simonds, Albert MacNaughton and George Ernest Robinson.—George T. Garnsey is located at Gloversville, N. Y., where he is studying the commercial chemistry of lumber.—William L. Smith, winner of a Rotch scholarship, is at present in Paris, France, studying.—George P. Sullivan is now president and manager of the Shawmut Chemical Company of Boston. He formerly worked with the National Fireworks Company and the Diamond Powder Company. He was married on October 11, 1911, to Miss Marguerite D. Martin of Dorchester, and has a baby girl born June 4, 1913.—E. M. Suess is at his home in Saltillo, Chile, South America.—Merton W. Hopkins is with the New England Construction Company in Boston.—The many friends of D. P. Gaillard will learn with regret of the recent death of his father, Col. David du Bose Gaillard. Colonel Gaillard was the right-hand man of Colonel Goethals in the construction of the Panama Canal, being in charge of the engineering work in the Culebra Cut division of the canal. He was held in the highest esteem by his co-workers as attested by the glowing tribute paid him by Colonel Goethals following his death.—Ralph B. McEwen sends greetings from Athena, Oregon, where he is in the automobile business. As a postscript, he states he is making $120,000 a year. The point may be in the wrong place, however.—Alexander Nimick is with the Colonial Steel Company in Monaca, Pa., where he has been since graduation.—Stanley E. Bates is editor of *Highway Publications* for the National Highway Association, with headquarters at South Yarmouth, Mass.—L. W. Perrin is in the civil engineering department of the Canadian Pacific Railway, and is located in Montreal.—A. Shohan is working in the Canal Zone on the Panama Canal.—John A. Starbuck is taking a student apprentice course with the Southern Pacific Railway.—Austin K. Wardwell is working for the Middlesex County commissioners as transitman.—Lawrence Watts is an army officer in the Coast Artillery Corps at Fort Strong, Boston.—W. S. Boynton is occupying the position of chief estimator with Osgood Bradley Car Company in Worcester.—Donald C. Barton is a fourth-year graduate student in geology at Harvard University.—L. O. Mills says "Hello!" from Pittsfield, Mass.—Tom McLaughlin, the old baseball captain of the freshman team, is an attorney-at-law, with offices in the Bijou Theatre building in New Haven, Conn. He was married some

time ago to one of the daughters of Mr. S. Z. Poli, the New England vaudeville magnate.—Charlie Barker and the secretary had a pleasant call recently from Burgess Darrow, who was on from the West. Also one from Bert Fryer. Come one, come all.—The secretary also met Joe Harrington on a train lately, en route to his home in Canton Junction (wherever that is!).—The secretary has learned of the death of Jesse F. Mathewson, with no details as to date. The Chicago booster committee consists of Herb Fryer, Boston; Bill Martin, New York; Bill Dolliver, Philadelphia; M. A. Grossman, Pittsburgh; Otis Hutchins, Western New York; and Mike Greenleaf, Minneapolis. Lists of 1911 men in each man's territory have been sent out by the secretary, and personal letters will be written to each. Remember a substantial prize will be given the class making the best showing at the reunion. Let's get the prize for 1911.—A class dinner is being arranged by Herb Fryer at the Union, Saturday evening, January 24. Postals have been sent out by the secretary. George C. Kenney will tell of his experiences in the wilds of northern Canada.

"Doc" Davis, whose real monicker is H. C. Davis, Jr., has a daughter, Anne Strother Davis, born November 13, 1913; address, Fort Moultrie, S. C.—Likewise Norman DeForest, a daughter, Elizabeth Anne DeForest.—The above items were received in a recent letter from "Pete" Gaillard.—"Bill" Burleigh, who is now with the Underwriters' Inspection Bureau, has announced his engagement to Miss Dorothy T. Baird of Natick, Mass. "Bill" makes weekly inspection trips to the Cable Works in Worcester, where the secretary is employed, and during one of these trips imparted the above information.—Just received a card from S. M. Niles. He is assistant manager of the Excel Shoe Form Company in Lynn.

Address Changes

(NOTE. As a result of a recent canvass of those members of the class from whom nothing has been heard since graduation and of those members of the class who have at some time or another been affiliated with another class, the secretary is able to give a comprehensive list of new addresses this month. The only way, however, in which the files of the class may be kept up to date, is for *every* member of the class to send in changes of address as soon as they occur.—O. B. D.)

Reuben Y. Althouse, 229 Ambridge St., Gary, Ind.—Eugene S. Anderson, 1122 Oak Park Ave., Oak Park, Ill.—Harold E. Babbitt, 806 West California St., Urbana, Ill.—Donald C. Bakewell, Duquesne Steel Company, Arrott Building, Pittsburgh, Pa. —Carlton S. Barnes, 924 Ferry Ave., Niagara Falls, N. Y.—David E. Bartlett, 5 Haynes St., Hartford, Conn.—Donald C. Barton, 16 Lexington Ave., Cambridge, Mass.—John R. Bowman, 15 Evergreen Ave., Somerville, Mass.—Winfred S. Boynton, care of

Osgood-Bradley Car Company, Worcester, Mass.—Pelayo Chinchilla-Kirkpatrick, Casilla 1182, Valparaiso, Chile, S. A.—Fred R. Churchill, 240 Franklin St., Cambridge, Mass.—Oberlin S. Clark, care of Clark & Lee Company, 201 Devonshire St., Boston.—William H. Coburn, 1254 Commonwealth Ave., Allston, Mass.—Marshall E. Comstock, 5 Cobbet Pl., Lynn, Mass.—Frederick W. Covill, 61 Montview St., West Roxbury, Mass.—George A. Cowee, 72 Gardner St., Allston, Mass.—Paul A. Cushman, 333 Grant Ave., Room 402, San Francisco, Cal.—Whitford Drake, Navy Yard, Boston.—Sterling B. Dyer, P. O. Box 216, Cape Elizabeth, Me.—Carl S. Ell, 206 Metropolitan Ave., Roslindale, Mass.—William D. Foster, 1607 Lytton Building, Chicago, Ill.—Stafford A. Francis, 11 McLellan St., Dorchester, Mass.—David P. Gaillard, care of Isthmian Canal Commission, Mills Building, Washington, D. C.—George T. Garnsey, Gloversville, N. Y.—William W. Goodhue, 138 Water St., Clinton, Mass.—Kanezo Goto, 207 Awoyama, Haraziku, Tokyo, Japan—Cuthbert T. Greenleaf, 1013 Purchase St., New Bedford, Mass.—Kenneth Greenleaf, 1350 Spruce Pl., Minneapolis, Minn.—Ambrose D. Gring, Jr., 64 Prescott St., Cambridge, Mass.—John A. Herlihy, 53 Howard St., Lynn, Mass.—Walter H. Hildebrand, 851 Wolfram St., Chicago, Ill.—Ralph A. Holbrook, Great Northern Hotel, Millinocket, Me.—Merton W. Hopkins, 44 Tennyson St., Somerville, Mass.—Harold G. Jenks, 98 Barry St., Montpelier, Vt.—Frederic C. Jewett, 25 Highland Road, Andover, Mass.—John E. Kelley, 11 Vernon St., Malden, Mass.—Allen H. Kimball, 403 Engineering Hall, University of Illinois, Urbana, Ill.—Arthur F. Leary, 55 Collins St., East Boston, Mass.—Harry P. Letton, 1437 Clifton N. W., Washington, D. C.—Max Levine, Ames, Iowa—Nathan Levy, 141 Chiswick Road, Brighton, Mass.—Harold S. Lord, 1049 Beacon St., Brookline, Mass.—Ralph B. McEwen, Athena, Oregon.—Thomas F. McLaughlin, Jr., 24 Church St., New Haven, Conn.—Charles A. J. McManus, 135 Homes Ave., Dorchester, Mass.—Albert McNaughton, 6 Beacon St., Boston, Mass.—Robert H. Mather, Windsor Locks, Conn.—Leonard O. Mills, 319 Y. M. C. A., Pittsfield, Mass.—Chester T. Morey, 453 Morris Ave., Providence, R. I.—Edward A. Nash, 207 Saxton Building, St. Joseph, Mo.—Norman Nelson, Box 662, Westfield, N. J.—Alexander Nimick, 6101 Fifth Ave., Pittsburgh, Pa.—Thomas B. O'Hearn, 282 Riverside St., Lowell, Mass.—Archie J. Orem, Ludwig, Nev.—Sidney A. Patchett, 1104 Main St., Buffalo, N. Y.—Ralph S. Pease, Berlin, N. H.—Lester W. Perrin, Chief Engineer's Office, C. P. R., Montreal, P. Q.—Arthur B. Richardson, St. Elizabeth, D. C.—Carl G. Richmond, 1817 Main St., Athol, Mass.—Harold L. Robinson, care of Swift & Company, Newburgh, N. Y.—Ralph E. Runels, 279 Henry St., Brooklyn, N. Y.—Edgar C. Savage, 117 Richmond St., Dorchester, Mass.—Otto R. Schurig 246 Newbury St., Boston—Nathaniel S. Seeley, 11 Ash St., Flush-

ing, N. Y.—Osborne H. Shenstone, 514 New Birks Building, Vancouver, B. C., Can.—Abraham Shohan, Y. M. C. A., Corozal, Canal Zone—Roland S. Simonds, 6 Beacon St., Boston.—William L. Smith, 16 Crest St., Concord Junction, Mass.—Harold G. Soule, 17 Burton Terrace, South Weymouth, Mass.—Willson Y. Stamper, Jr., Port Ontario, Oswego, N. Y.—John A. Starbuck, Junipero Plaza, Santa Barbara, Cal.—Oswald W. Stewart, 75 Milton Ave., Hyde Park, Mass.—Charles R. Stover, 505 Second Ave., Altoona, Pa.—George P. Sullivan, care of Shawmut Chemical Company, 42 Batterymarch St., Boston.—To Tan Sun, 868 Braddock Ave., Braddock, Pa.—Harvey A. Sweetser, 61 Martland Ave., Brockton, Mass.—Guy W. True, 20 Beacon St., Winthrop, Mass. —Roy D. Van Alstine, Mitchell, S. D.—Julius Waldstein, 72 Revere St., Boston.—Louis W. Walz, care of American Oil Works, Rochester, N. Y.—Austin K. Wardwell, 465 Broadway, Cambridge, Mass.—Harry W. Waterfall, University Club, Urbana, Ill.—George S. Watson, Main and Field Sts., Dallas, Tex.—Lawrence Watts, Fort Strong, Boston.—Roland B. Wells, East Wakefield, N. H.—Peter D. White, Brooks, Alberta, Can.—Houghton H. Whithed, 2006 East 64th St., Seattle, Wash.—Stanley N. Whitney, 71 Aspinwall Ave., Brookline, Mass.—Albert O. Wilson, 92 Oxford Ave., Cambridge, Mass.—Frank A. Wood, 7 Florida St., Dorchester, Mass.—Robert O. Wood, 55 Jackson St., Lawrence, Mass.—Ewing M. Young, Y. M. C. A., Springfield, Mass.

The secretary would like to learn the whereabouts of the following:—V. L. Ahern, Miss Sarah R. Anderson, Fred R. Bailey, S. E. Bates, M. S. Beecher, L. N. Brody, S. M. Burroughs, W. R. Cannon, E. J. Carey, Miss Georgiana Charleston, Chushen Chow, Antonio C. Clavell, A. B. Cohen, Conor Coppinger, Ignacio L. Corcuera, I. C. Creighton, A. C. Davies, E. R. Davis, J. S. Dean, Louis de Florez (mail returned from 21 East 32d St., New York City), J. G. Diaz, W. R. Diaz, J. E. Dunphy, C. W. Eaton, C. P. Echeverria, R. W. Egan, L. E. Etting, Francisco Fernandez, W. N. Flanders, P. R. Fleming, E. M. H. Follansbee, W. E. Fortune, A. W. Frank, R. W. Frost, J. J. A. Gannon (mail returned from 28 Highland Park Ave., Roxbury, Mass.), J. H. Gavin, Jr., A. T. Gay, Joseph Gershberg, S. V. Givrigian, Jacob Goldberg, E. W. Goodwin, C. H. Harrington, J. D. Hassett, W. B. Ives, R. C. Jacobs, Jr., W. W. Johnson, C. C. Jones, C. L. Jones, J. J. Kennedy, Edward Kenway, Scott P. Kimball, Thomas Larkin, P. G. Lauman, Pedro de Souza Leao, R. W. Lesser, E. E. McAnnelly, W. F. McKnight, J. D. McNamara, C. B. Magrath, William Henry Martin (Course I), Bala Pershad Mathur, L. M. Merrill, W. B. Miller, Raj Kishor Misra, L. E. Monge, Abram Morris (mail returned from 1639 Roscoe St., Chicago, Ill.), Robert Morris, S. M. Niles, Armand Pauvolid, P. H. Pearson, J. B. Pierce, Jr., C. S. Pratt, F. A. Pretzinger, L. R. Rapeli, Webster Richardson, Benjamin Robinson (mail returned from 481 Belmont Ave., Spring-

field, Mass.), R. V. Roche, L. M. Sandstein, F. M. Saqui, C. A. Schafer (mail returned from 294 14th St., Portland, Oregon), R. E. Schatz, Henry Schreiber, Jr., E. A. Schwarz, A. E. Sharkey, Harrison A. Smith (Course III), H. D. Soule, J. C. Stevens, H. R. Tisdale, A. W. Underhill, Jr., C. A. Valverde, J. B. Walcott (mail returned from 17 Blagden St., Boston), W. R. Walker, G. B. Wilbur, 2d, C. S. Williams, Jr., William J. Wilson (Course I), W. S. Woods, Shuichi Yamaguchi.

1912.

RANDALL CREMER, *Sec.*, 9 Orchard Street, New Rochelle, N. Y.
JOHN E. WHITTLESEY, *Asst. Sec.*, 10 Regent Street, W. Newton, Mass.

This has been a very quiet period since the last issue of the REVIEW. I have heard very little outside of New England of the doings of 1912.

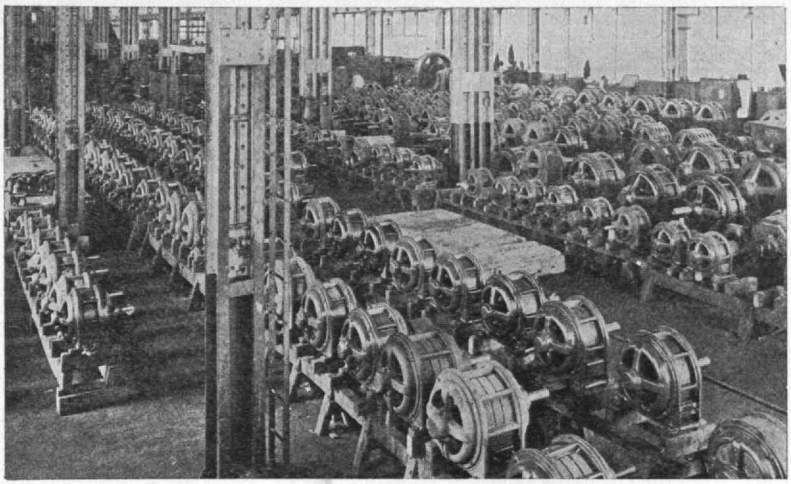
Tom Fisher, II, is now with the Associated Factory Mutual Fire Insurance Company here in town.—Kebbon, IV, and Busby, VI, are working on the new Institute buildings.—Rumors have it that Shell, II, has got another job.—N. McL. Sage was married, on December 6, at St. Paul's Cathedral, to Miss Charlotte Simonds of Brookline, Mass., who was graduated at the "'Stute" in 1913.—The engagement of Rowley, Course II, to Miss Betty Hostemann of Springfield, Ohio, Vassar, '13, was announced last summer.—Here's a little enthusiasm from Fox, II, who was in town lately:

> I even went so far as to spend the afternoon in the engineering library in an endeavor to assimilate a little German about Kugellager, . . . Kugellager doesn't mean Bock beer, but ball bearings.

—Lieut. Jerome C. Hunsaker has been detailed by the government to superintend the courses in Aëronautics at the Institute. His translation of Eiffel's "Resistance of the Air and Aviation" was brought out recently by Houghton-Mifflin Company. On May 7 the Smithsonian Institution presented the Langley medals to Gustav Eiffel, of France, and Glenn H. Curtiss, of the United States. M. Jusserand accepted the medal on behalf of the veteran scientist whose researches form the basis of the art of aëroplane building on sound engineering principles. Mr. Eiffel is now 80 years old, but has preserved all the enthusiasm of youth. The Eiffel Tower, in Paris, was used in the beginning of its builder's experiments to determine the resistance of the air. The tower was completed in 1889, and after studying the atmosphere and the winds, the scientist turned his energies to aërial flight. In 1909 he built his aëro-dynamic laboratory in the Champ de Mars and started a series of tests. The report of this, which Lieut. Hunsaker has translated into English, must prove of vital importance to all those interested in aviation.

Address Changes

John L. Barry, Jr., 45 Prospect St., Waterbury, Conn.—A. V. DeForest, Thomson Hall, Stockton St., Princeton, N. J.—H. W. Hall, Nontom Falls, Schuyler Co., New York.—J. C. Hunsaker, 1677 Beacon St., Brookline, Mass.—H. E. Kebbon, the Canterbury, Charlesgate West, Boston, Mass.—Charles H. S. Merrill, Las Vegas, Nevada.—C. N. Morrill, 41 Batavia St., Boston, Mass.—Samuel S. Stevens, Magnolia, Mass.—H. P. Williams, 509 Boyd Building, Winnipeg, Can.—H. F. Clark, 999 Bush St., San Francisco, Cal.—A. F. Allen, Campello, Mass.—Donald E. Bent, Richmond, Mo.—Arthur Campbell, Manila, P. I.—Kenneth Cartwright, 41 Holmes Ave., Waterbury, Conn.—Randall Cremer, 9 Orchard St., New Rochelle, N. Y.—R. H. Doane, Suite 14, Jackson Hall, Trinity Court, Dartmouth St., Boston, Mass.—John Hall, Health Office, City Hall, Long Branch, N. J.—Ernest Nicholson, 204 Union St., Schenectady, N. Y.—G. W. Rapelli, 936 Pueyrredon, Buenos Ayres, S. A.—G. A. Robinson, 222 W. Selden St., Mattapan, Mass.—Clyde F. Smith, 6521 Greenwood Ave., Chicago, Ill.—H. E. Soulis, 76 Winslow St., Everett, Mass.—R. B. Brownlee, 247 William St., East Orange, N. J.—Joseph Desloge, The Washington, St. Louis, Mo.—P. C. Jones, Sao Paulo, Brazil—M. J. Kimball, 165 Washington Ave., Bellevue, Pittsburgh, Pa.—R. B. Pulsifer, 62 School St., Manchester, Mass.—G. H. Rhodes, Bishop & Co., Los Angeles, Cal.—K. C. Robinson, 98 Hemenway St., Boston, Mass.—F. J. Shepard, Jr., 60 State St., Boston, Mass., care of Elec. Storage Battery Company.—A. G. Thompson, Anderson House, Altoona, Pa.—C. R. Woodward, 91 Lincoln St., Melrose, Mass.—F. D. Bishop, 19 Foster St., Springfield, Mass.



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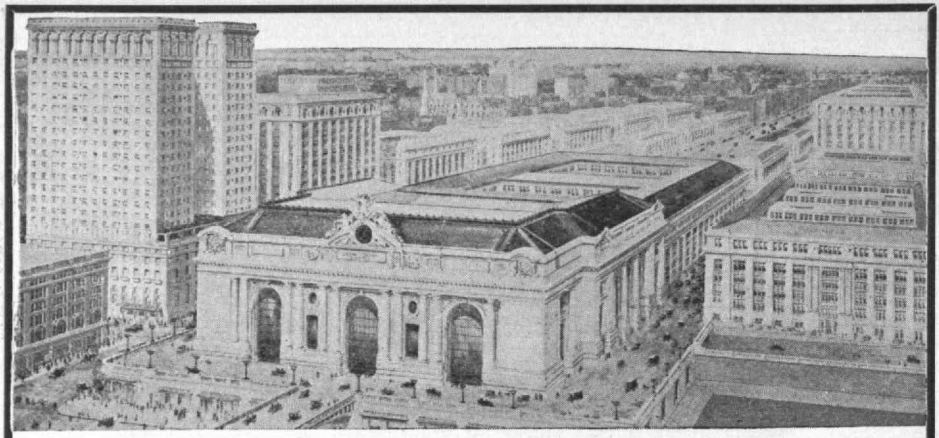

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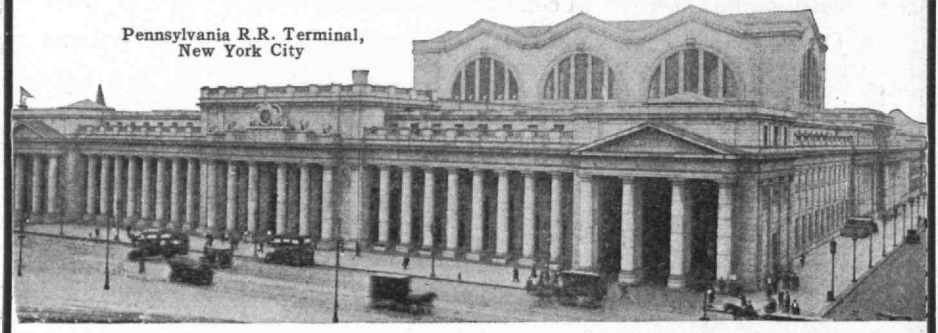

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